

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Landra Porlos Examiner #: 81697 Date: \_\_\_\_\_  
Art Unit: 1714 Phone Number 30 \_\_\_\_\_ Serial Number: 10/681,091  
Mail Box and Bldg/Room Location: Rem 16D18 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: latex and its preparation

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

\*\*\*\*\*

## STAFF USE ONLY

|  | Type of Search                                    | Vendors and cost where applicable |
|--|---|-----------------------------------|
| Searcher: <u>291</u>                   | NA Sequence (#) _____                             | STN <u>\$ 981.14</u>              |
| Searcher Phone #: _____                | AA Sequence (#) _____                             | Dialog _____                      |
| Searcher Location: _____               | Structure (#) _____                               | Questel/Orbit _____               |
| Date Searcher Picked Up: _____         | Bibliographic <input checked="" type="checkbox"/> | Dr.Link _____                     |
| Date Completed: <u>11/28/05</u>        | Litigation _____                                  | Lexis/Nexis _____                 |
| Searcher Prep & Review Time: <u>30</u> | Fulltext _____                                    | Sequence Systems _____            |
| Clerical Prep Time: <u>30</u>          | Patent Family _____                               | WWW/Internet _____                |
| Online Time: <u>225</u>                | Other _____                                       | Other (specify) _____             |



# **STIC Search Report**

**EIC 1700**

**STIC Database Tracking Number: 172431**

**TO: Sandra Poulos**  
**Location: REM 10D18**  
**Art Unit : 1714**  
**November 28, 2005**

**Case Serial Number: 10/681091**

**From: Les Henderson**  
**Location: EIC 1700**  
**REM 4B28 / 4A30**  
**Phone: 571-272-2538**

**Leslie.henderson@uspto.gov**

## **Search Notes**



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

Mellerson, Kendra

172431

**From:** "Sandra Poulos" [sandra.poulos@uspto.gov]  
**Sent:** Wednesday, November 23, 2005 2:55 PM  
**To:** STIC-EIC1700  
**Subject:** Database Search Request

**Requester:**  
Sandra Poulos (TC1700)  
**Art Unit:**  
1714  
**Employee Number:**  
81697  
**Office Location:**  
REM 10D18  
**Phone Number:**  
571-272-6428  
**Mailbox Number:**

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf - Cnt

NOV 23 2005

Pat. & T.M. Office

**Case serial number:**  
10/681091  
**Class / Subclass(es):**  
524/457  
**Earliest Priority Filing Date:**  
10/09/2002  
**Format preferred for results:**  
Paper  
**Search Topic Information:**  
  
**Special Instructions and Other Comments:**  
Please search claims 7 and 17.



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Bib Data Sheet

CONFIRMATION NO. 8109

|                             |                                       |              |                        |                                     |
|-----------------------------|---------------------------------------|--------------|------------------------|-------------------------------------|
| SERIAL NUMBER<br>10/681,091 | FILING DATE<br>10/09/2003<br><br>RULE | CLASS<br>524 | GROUP ART UNIT<br>1714 | ATTORNEY<br>DOCKET NO.<br>237714US0 |
|-----------------------------|---------------------------------------|--------------|------------------------|-------------------------------------|

## APPLICANTS

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\*\* CONTINUING DATA \*\*\*\*\*

\*\* FOREIGN APPLICATIONS \*\*\*\*\*

GERMANY 102 47 051.0 10/09/2002

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

\*\* 01/08/2004

|   |   |                                |                        |                       |                            |
|---|---|--------------------------------|------------------------|-----------------------|----------------------------|
| Foreign Priority claimed<br>35 USC 119 (a-d) conditions met | <input type="checkbox"/> yes <input type="checkbox"/> no<br><input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance | STATE OR<br>COUNTRY<br>GERMANY | SHEETS<br>DRAWING<br>0 | TOTAL<br>CLAIMS<br>26 | INDEPENDENT<br>CLAIMS<br>2 |
| Verified and<br>Acknowledged                                | Examiner's Signature _____<br>Initials _____  |                                |                        |                       |                            |

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 22314

## TITLE

Latex and its preparation

|                            |   |   |
|----------------------------|---|---|
| FILING FEE<br><br>RECEIVED | FEES: Authority has been given in Paper<br>No. _____ to charge/credit DEPOSIT ACCOUNT<br>No. _____ for following: | <input type="checkbox"/> All Fees   |
|                            |   | <input type="checkbox"/> 1.16 Fees ( Filing )<br><input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) |

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| 878 |  | <input type="checkbox"/> 1.18 Fees ( Issue )<br><input type="checkbox"/> Other<br><input type="checkbox"/> Credit |
|-----|--|---|

## ABSTRACT

A latex having a reduced amount of 4-phenylcyclohexene is obtainable by reacting A) 30-90% by weight of at least one ethylenically unsaturated monomer; B) 70-10% by weight of a diene; C) 1-10% by weight of  $\alpha,\beta$ -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and D) an auxiliary, an additive or mixtures thereof; wherein a sum of A, B and C is 100% by weight. The reaction follows a gradient regime for components A and B. In the gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous increase; with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 - 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made i) constantly for A and B, and/or ii) decreasingly for A and ascendingly for B, and/or iii) decreasingly for B and ascendingly for A, in any sequence, individually or in combination.

2001 0072 9-5

## CLAIMS

1. A latex, obtainable by reacting
  - A) 30-90% by weight of at least one ethylenically unsaturated monomer;
  - B) 70-10% by weight of a diene;
  - 5 C) 1-10% by weight of  $\alpha,\beta$ -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and
  - D) at least one auxiliary, at least one additive or mixtures thereof;wherein a sum of A, B and C is 100% by weight;  
wherein said reacting follows a gradient regime for components A and B;  
10 wherein, in said gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous increase;  
with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 -  
15 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made
  - i) constantly for A and B, and/or
  - ii) decreasingly for A and ascendingly for B, and/or
  - 20 iii) decreasingly for B and ascendingly for A,in any sequence, individually or in combination.
2. The latex as claimed in claim 1, wherein component A is selected from the group consisting of  $C_2$  to  $C_{20}$  alkenes, functionalized vinyl compounds,  $C_5$  to  $C_{20}$  alkadienes having isolated double bonds,  $C_5$  to  $C_{20}$  alkatrienes having isolated double bonds,  $C_5$  to  $C_{20}$   
25 cycloolefins, vinyl-substituted aromatics,  $\alpha,\beta$ -monoethylenically unsaturated carboxylic



acids, nitriles of  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids, amides of  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids, anhydrides of  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids,  $C_1$  to  $C_{20}$  alkyl esters of acrylic acid,  $C_1$  to  $C_{20}$  alkyl esters of methacrylic acid,  $C_6$  to  $C_{20}$  aryl esters of acrylic acid and  $C_6$  to  $C_{20}$  aryl esters of methacrylic acid.

3. The latex as claimed in claim 2, wherein component A comprises vinylaromatics.

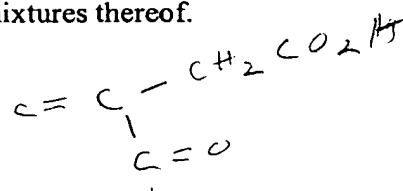
4. The latex as claimed in claim 3, wherein component A comprises styrene.

5. The latex as claimed in claim 1, wherein component B is selected from the group consisting of  $C_4$  to  $C_{20}$  dienes having conjugated double bonds.

6. The latex as claimed in claim 1, wherein component B comprises butadiene.

7. The latex as claimed in claim 1, wherein component C is selected from the group consisting of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated monocarboxylic acids,  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated dicarboxylic acids, esters of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated monocarboxylic acids with  $C_1$  to  $C_{12}$  alkanols, esters of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated dicarboxylic acids with  $C_1$  to  $C_{12}$  alkanols, amides of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated monocarboxylic acids, amides of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated dicarboxylic acids, nitriles of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated monocarboxylic acids, nitriles of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated dicarboxylic acids, anhydrides of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated monocarboxylic acids, and anhydrides of  $C_3$  to  $C_6$   $\alpha,\beta$ -monoethylenically unsaturated dicarboxylic acids.

8. The latex as claimed in claim 1, wherein component C comprises acrylic acid, acrylonitrile, acrylamide, methacrylic acid, itaconic acid or mixtures thereof.



9. The latex as claimed in claim 1, wherein at least one of components D is selected from the group consisting of surface-active substances, initiators, molecular weight regulators, pH regulators, complexing agents, and mixtures thereof.
10. The latex as claimed in claim 1, wherein before the beginning of said gradient regime a portion of components A and B is metered in with constant linearity.
11. The latex as claimed in claim 1, wherein, before said starting molar ratio of A to B or said target molar ratio of A to B is reached, the gradient regime operates without or with single or multiple reversal of a change in the amount added per unit time of A and B.
12. The latex as claimed in claim 1, wherein there are two, three or four discontinuous changes in the amount added per unit time.
13. The latex as claimed in claim 1, wherein said reacting takes place at a temperature of from 5 to 130°C; and  
wherein said temperature is constant during said reacting; or  
wherein said temperature varies during said reacting.
14. The latex as claimed in claim 1, wherein component C is run in with a constant and/or with a decreasing and/or an increasing change in the amount added per unit time and any desired combinations thereof and dependently or independently of the amount added per unit time of components A and B .
15. The latex as claimed in claim 1, wherein component D is run in with a constant and/or with a decreasing and/or an increasing change in the amount added per unit time and any desired combinations thereof and dependently or independently of the amount of components A and B added per unit time.
16. A process for preparing a latex, comprising:  
reacting  
A) 30-90% by weight of at least one ethylenically unsaturated monomer;

B) 70-10% by weight of a diene;

C) 1-10% by weight of  $\alpha,\beta$ -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and

D) at least one auxiliary, at least one additive or mixtures thereof;

5 wherein a sum of A, B and C is 100% by weight;

wherein said reacting follows a gradient regime for components A and B;

wherein, in said gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous  
10 increase;

with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 - 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made

- 15
- i) constantly for A and B, and/or
  - ii) decreasingly for A and ascendingly for B, and/or
  - iii) decreasingly for B and ascendingly for A,
- in any sequence, individually or in combination.

17. The process according to claim 16, wherein component A is selected from the  
20 group consisting of  $C_2$  to  $C_{20}$  alkenes, functionalized vinyl compounds,  $C_5$  to  $C_{20}$  alkadienes having isolated double bonds,  $C_5$  to  $C_{20}$  alkatrienes having isolated double bonds,  $C_5$  to  $C_{20}$  cycloolefins, vinyl-substituted aromatics,  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids, nitriles of  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids, amides of  $\alpha,\beta$ -monoethylenically unsaturated carboxylic acids, anhydrides of  $\alpha,\beta$ -monoethylenically  
25 unsaturated carboxylic acids,  $C_1$  to  $C_{20}$  alkyl esters of acrylic acid,  $C_1$  to  $C_{20}$  alkyl esters of

methacrylic acid, C<sub>6</sub> to C<sub>20</sub> aryl esters of acrylic acid and C<sub>6</sub> to C<sub>20</sub> aryl esters of methacrylic acid.

18. The process according to claim 16, wherein component A comprises vinylaromatics.

5 19. The process according to claim 16, wherein component A comprises styrene.

20. The process according to claim 16, wherein component B is selected from the group consisting of C<sub>4</sub> to C<sub>20</sub> dienes having conjugated double bonds.

21. The process according to claim 16, wherein component B comprises butadiene.

10 22. The process according to claim 16, wherein component C is selected from the group consisting of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated monocarboxylic acids, C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated dicarboxylic acids, esters of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated monocarboxylic acids with C<sub>1</sub> to C<sub>12</sub> alkanols, esters of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated dicarboxylic acids with C<sub>1</sub> to C<sub>12</sub> alkanols, amides of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated monocarboxylic acids, amides of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated dicarboxylic acids, nitriles of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated monocarboxylic acids, nitriles of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated dicarboxylic acids, anhydrides of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated monocarboxylic acids, and anhydrides of C<sub>3</sub> to C<sub>6</sub> α,β-monoethylenically unsaturated dicarboxylic acids.

23. The process according to claim 16, wherein component C comprises acrylic acid, acrylonitrile, acrylamide, methacrylic acid, itaconic acid or mixtures thereof.

24. The process according to claim 16, wherein at least one of component D is selected from the group consisting of surface-active substances, initiators, molecular weight regulators, pH regulators, complexing agents, and mixtures thereof.

25. The process according to claim 16, wherein said reacting takes place at a  
5 temperature of from 5 to 130°C.

26. An article coated with the latex according to claim 1.

=> d his ful

(FILE 'HOME' ENTERED AT 10:09:34 ON 28 NOV 2005)

FILE 'HCAPLUS' ENTERED AT 10:09:58 ON 28 NOV 2005

L1 E US20040072945/PN  
1 SEA ABB=ON PLU=ON US20040072945/PN  
D ALL  
SEL RN

FILE 'REGISTRY' ENTERED AT 10:10:54 ON 28 NOV 2005

L2 1 SEA ABB=ON PLU=ON 114464-60-7/BI  
D SCAN  
L3 1 SEA ABB=ON PLU=ON 114464-60-7/RN  
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:24:33 ON 28 NOV 2005

L4 STR  
L5 STR  
L6 STR

FILE 'REGISTRY' ENTERED AT 10:28:34 ON 28 NOV 2005

L7 SCR 2043  
L8 38 SEA SSS SAM L4 AND L5 AND L6 AND L7  
E ACRYLONITRILE/CN  
E ACRYLONITRILE/CN  
L9 1 SEA ABB=ON PLU=ON ACRYLONITRILE/CN  
D SCAN  
D RN  
E 107-13-1/RN  
L10 1 SEA ABB=ON PLU=ON 107-13-1/RN  
D SCAN  
E ACRYLAMIDE/CN  
L11 1 SEA ABB=ON PLU=ON ACRYLAMIDE/CN  
D SCAN  
E ITACONIC AICD/CN  
E -25  
E ITACONIC/CN  
E ITACONIC ACID/CN  
L12 1 SEA ABB=ON PLU=ON ITACONIC ACID/CN  
D SCAN  
D RN  
E 97-65-4/RN  
L13 1 SEA ABB=ON PLU=ON 97-65-4/RN  
D SCAN  
L14 1 SEA ABB=ON PLU=ON ACRYLIC ACID/CN  
D SCAN  
D RN  
L15 1 SEA ABB=ON PLU=ON 79-10-7/RN  
D SCAN  
L16 1 SEA ABB=ON PLU=ON METHACRYLIC ACID/CN  
D SCAN  
D RN  
L17 1 SEA ABB=ON PLU=ON 79-41-4/RN  
D SCAN  
D SCAN L11  
D L11 RN  
L18 1 SEA ABB=ON PLU=ON 79-06-1/RN  
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:44:06 ON 28 NOV 2005  
D QUE STAT L6

L19 STR L6  
D QUE STAT L4  
D QUE STAT L5  
D QUE STAT L6  
D QUE STAT L19

FILE 'REGISTRY' ENTERED AT 10:49:44 ON 28 NOV 2005  
L20 50 SEA SSS SAM L4 AND L5 AND L19 AND L7  
D QUE STAT

FILE 'LREGISTRY' ENTERED AT 11:10:02 ON 28 NOV 2005  
L21 STR L19

FILE 'REGISTRY' ENTERED AT 11:11:54 ON 28 NOV 2005  
L22 50 SEA SSS SAM L4 AND L5 AND L21 AND L7  
D QUE STAT

FILE 'LREGISTRY' ENTERED AT 12:10:19 ON 28 NOV 2005  
L23 STR L21

FILE 'REGISTRY' ENTERED AT 12:11:52 ON 28 NOV 2005  
L24 SCR 2077  
L25 50 SEA SSS SAM L4 AND L5 AND L23 AND L7 AND L24  
L26 8354 SEA SSS FUL L4 AND L5 AND L23 AND L7 AND L24  
SAV L26 POU091/A

FILE 'LREGISTRY' ENTERED AT 12:16:48 ON 28 NOV 2005  
L27 STR L4

FILE 'REGISTRY' ENTERED AT 12:18:19 ON 28 NOV 2005  
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L29 5043 SEA SUB=L26 SSS FUL (L27 AND L5 AND L23)  
SAV L29 POU091A/A  
E 107-13-1/CRN  
L30 18545 SEA ABB=ON PLU=ON 107-13-1/CRN  
E 79-10-7/CRN  
L31 58027 SEA ABB=ON PLU=ON 79-10-7/CRN  
E 79-06-1/CRN  
L32 13864 SEA ABB=ON PLU=ON 79-06-1/CRN  
E 79-41-4/CRN  
L33 44757 SEA ABB=ON PLU=ON 79-41-4/CRN  
E 97-65-4/CRN  
L34 5511 SEA ABB=ON PLU=ON 97-65-4/CRN  
E 106-99-0/CRN  
L35 10015 SEA ABB=ON PLU=ON 106-99-0/CRN  
E 100-42-5/CRN  
L36 71546 SEA ABB=ON PLU=ON 100-42-5/CRN  
L37 3042 SEA ABB=ON PLU=ON ((L30 OR L31 OR L32 OR L33 OR  
L34)) AND L35 AND L36

FILE 'HCAPLUS' ENTERED AT 12:27:05 ON 28 NOV 2005  
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L39 31374 SEA ABB=ON PLU=ON L29  
L40 27711 SEA ABB=ON PLU=ON L37  
L41 464105 SEA ABB=ON PLU=ON LATEX? OR RUBBER? OR ELASTOMER?  
L42 18304 SEA ABB=ON PLU=ON L41 AND L38

FILE 'REGISTRY' ENTERED AT 12:30:30 ON 28 NOV 2005  
E 113974-98-/CRN  
E 113974-98-4/CRN  
L43 5 SEA ABB=ON PLU=ON 113974-98-4/CRN  
D SCAN

L44 2101 SEA ABB=ON PLU=ON L26 AND 3/NC  
 L45 2247 SEA ABB=ON PLU=ON L26 AND 4/NC  
 L46 724 SEA ABB=ON PLU=ON L29 AND 3/NC  
 L47 1268 SEA ABB=ON PLU=ON L29 AND 4/NC  
 L48 27 SEA ABB=ON PLU=ON L37 AND 3/NC  
 L49 595 SEA ABB=ON PLU=ON L37 AND 4/NC  
 E 114464-60-7/RN  
 L50 1 SEA ABB=ON PLU=ON 114464-60-7/RN  
 D SCAN

FILE 'HCAPLUS' ENTERED AT 12:40:07 ON 28 NOV 2005

L51 3 SEA ABB=ON PLU=ON L50  
 D SCAN  
 L52 3 SEA ABB=ON PLU=ON L43  
 D SCAN  
 L53 30514 SEA ABB=ON PLU=ON L44  
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 L55 24591 SEA ABB=ON PLU=ON L48  
 L56 4674 SEA ABB=ON PLU=ON L45  
 L57 3895 SEA ABB=ON PLU=ON L47  
 L58 2954 SEA ABB=ON PLU=ON L49  
 L59 33121 SEA ABB=ON PLU=ON (L53 OR L54 OR L55 OR L56 OR L57  
 OR L58)  
 L60 17113 SEA ABB=ON PLU=ON L41 AND L59  
 E SURFACE ACTIVE/CT  
 L61 52244 SEA ABB=ON PLU=ON SURFAC?(A)ACT? OR SURFACEACT?  
 L62 78388 SEA ABB=ON PLU=ON INITIATOR?  
 L63 7284 SEA ABB=ON PLU=ON (MOLECUL?(A)(WEIGHT? OR WT?) OR  
 MW)(2A)(REGULAT? OR CONTROL?)  
 L64 65193 SEA ABB=ON PLU=ON (PH OR ACID? OR BASIC? OR BASE OR  
 BASES)(2A)(REGUL? OR CONTROL?)  
 L65 17851 SEA ABB=ON PLU=ON COMPLEX?(A)AGENT?  
 L66 218236 SEA ABB=ON PLU=ON (L61 OR L62 OR L63 OR L64 OR L65)  
 L67 728 SEA ABB=ON PLU=ON L60 AND L66  
 L68 98 SEA ABB=ON PLU=ON GRADIENT?(2A)REGIM?  
 L69 0 SEA ABB=ON PLU=ON L68 AND L67  
 L70 227427 SEA ABB=ON PLU=ON GRADIENT?  
 L71 0 SEA ABB=ON PLU=ON L70 AND L67  
 L72 17586 SEA ABB=ON PLU=ON COMPONENT?(3A)(INCREAS? OR  
 DECREAS?)  
 L73 0 SEA ABB=ON PLU=ON L72 AND L67  
 L74 70532 SEA ABB=ON PLU=ON LATEX?  
 L75 297 SEA ABB=ON PLU=ON L74 AND L67  
 L76 30514 SEA ABB=ON PLU=ON (L53 OR L54 OR L55)  
 L77 3462 SEA ABB=ON PLU=ON L76 AND L74  
 L78 0 SEA ABB=ON PLU=ON L77 AND L68  
 L79 7 SEA ABB=ON PLU=ON L77 AND L70  
 D L79 1-7 KWIC  
 L80 1 SEA ABB=ON PLU=ON L59 AND L68  
 D SCAN  
 L81 59 SEA ABB=ON PLU=ON L59 AND L70  
 D 1-5 KWIC  
 L82 34 SEA ABB=ON PLU=ON L81 AND L41  
 L83 8 SEA ABB=ON PLU=ON L82 AND L74  
 L84 0 SEA ABB=ON PLU=ON L81 AND L66  
 L85 2 SEA ABB=ON PLU=ON L77 AND L72  
 L86 4154 SEA ABB=ON PLU=ON L59 AND (INCR? OR DECR? OR  
 CONTINU?)  
 L87 1411 SEA ABB=ON PLU=ON L86 AND (TIME? OR SEC# OR SECOND?  
 OR MIN# OR MINUTE# OR HOUR# OR HR#)  
 L88 1073 SEA ABB=ON PLU=ON L87 AND (TEMP# OR TEMPERATURE# OR  
 HEAT? OR THERMAL? OR DEG# OR DEGREE# OR CENTIGRAD? OR



CELSIUS? OR FAHRENHEIT? OR KELVIN? OR COOL? OR FREEZ?  
 OR FROZ? OR CHILL?)  
 L89 5 SEA ABB=ON PLU=ON L88 AND L70  
 L90 29 SEA ABB=ON PLU=ON L81 AND (INCR? OR DECR? OR CONT?)  
 L91 15 SEA ABB=ON PLU=ON L81 AND (TIME? OR SEC# OR SECOND?  
 OR MIN# OR MINUTE# OR HOUR# OR HR#)  
 L92 37 SEA ABB=ON PLU=ON L81 AND (TEMP# OR TEMPERATURE# OR  
 HEAT? OR THERMAL? OR DEG# OR DEGREE# OR CENTIGRAD? OR  
 CELSIUS? OR FAHRENHEIT? OR KELVIN? OR COOL? OR FREEZ?  
 OR FROZ? OR CHILL?)  
 L93 7250 SEA ABB=ON PLU=ON COAT? (2A)ARTICL?  
 L94 0 SEA ABB=ON PLU=ON L81 AND L93  
 L95 0 SEA ABB=ON PLU=ON L75 AND L93  
 L96 42 SEA ABB=ON PLU=ON L75 AND COAT?  
 D 1-5 KWIC  
 L97 61 SEA ABB=ON PLU=ON (L79 OR L80 OR L81 OR L82 OR L83)  
 OR L85  
 L98 46 SEA ABB=ON PLU=ON (L89 OR L90 OR L91 OR L92)  
 L99 61 SEA ABB=ON PLU=ON L97 OR L98  
 L100 0 SEA ABB=ON PLU=ON L96 AND L99  
 L101 5 SEA ABB=ON PLU=ON L99 AND COAT?  
 L102 61 SEA ABB=ON PLU=ON L99 OR L101  
 L103 3 SEA ABB=ON PLU=ON L51 OR L52  
 L104 63 SEA ABB=ON PLU=ON L103 OR L102  
 L105 0 SEA ABB=ON PLU=ON L104 AND (MOLEC? (A) (WEIGHT? OR  
 WT?) OR MW)  
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 PERCENT? OR PER(W)CENT? OR PCT?)  
 L107 9 SEA ABB=ON PLU=ON L104 AND COMPONENT?  
 L108 63 SEA ABB=ON PLU=ON L104 OR L106 OR L107  
 L109 2 SEA ABB=ON PLU=ON L108 AND MOLAR?  
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 L111 4 SEA ABB=ON PLU=ON L57 AND L70  
 L112 4 SEA ABB=ON PLU=ON L110 OR L111  
 L113 63 SEA ABB=ON PLU=ON L110 OR L111 OR L112  
 L114 60 SEA ABB=ON PLU=ON L113 NOT L103  
 E COATINGS/CT  
 L115 7724 SEA ABB=ON PLU=ON COATINGS/CT  
 E COATINGS MAT/CT  
 E COATINGS/CT  
 E COATINGS PROC/CT  
 E COATING PROC/CT  
 L116 123267 SEA ABB=ON PLU=ON "COATING PROCESS"/CT  
 E COATING MATERIALS/CT  
 L117 268501 SEA ABB=ON PLU=ON COATING MATERIALS/CT  
 L118 2 SEA ABB=ON PLU=ON L113 AND ((L115 OR L116 OR L117))  
 L119 63 SEA ABB=ON PLU=ON L118 OR L113  
 L120 60 SEA ABB=ON PLU=ON L119 NOT L103  
 L121 35 SEA ABB=ON PLU=ON L120 AND L41  
 L122 25 SEA ABB=ON PLU=ON L120 NOT L121  
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=> => => d que stat l103

L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN  
 L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN  
 L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50  
 L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43  
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52

=&gt; d 1103 1-3 ibib abs hitstr hitind

L103 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:305174 HCAPLUS

DOCUMENT NUMBER: 140:304682

TITLE: Process for preparing latex by reaction in gradient regime

INVENTOR(S): Schwenzfeier, Hans-Peter; Hahn, Sabine; Chen, Jinqiu; Wieboldt, Jens

PATENT ASSIGNEE(S): Polymer Latex G.m.b.H. &amp; Co. K.-G., Germany

SOURCE: Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE              |
|---|------|----------|------------------|-------------------|
| EP 1408059  | A1   | 20040414 | EP 2003-22346    | 2003<br>1004      |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,<br>MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,<br>EE, HU, SK |      |          |                  |                   |
| DE 10247051   | A1   | 20040422 | DE 2002-10247051 | 2002<br>1009      |
| CA 2444428  | AA   | 20040409 | CA 2003-2444428  | 2003<br>1007      |
| JP 2004131734   | A2   | 20040430 | JP 2003-348245   | 2003<br>1007      |
| BR 2003004732   | A    | 20040831 | BR 2003-4732     | 2003<br>1007      |
| CN 1496998  | A    | 20040519 | CN 2003-10102801 | 2003<br>1008      |
| ZA 2003007846   | A    | 20040706 | ZA 2003-7846     | 2003<br>1008      |
| US 2004072945   | A1   | 20040415 | US 2003-681091   | 2003<br>1009      |
| PRIORITY APPLN. INFO.:  |      |          | DE 2002-10247051 | A<br>2002<br>1009 |

AB The process for preparing a latex having a reduced amount of 4-phenylcyclohexene comprises reacting (A) 30-90%  $\geq 1$  ethylenically unsatd. monomer (e.g., styrene); (B) 70-10% diene (e.g., butadiene); (C) 1-10%  $\alpha, \beta$ -unsatd. carboxylic acids, carboxylic acid nitriles and/or carboxylic acid amides (e.g., acrylic acid); and (D) an auxiliary and/or an additive; wherein the sum of A, B and C is 100%. The reaction follows a gradient regime for components A and B. In the gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per

unit time continuously decreases for one of components A or B which does not undergo the continuous increase; with the proviso that a starting molar ratio of A to B is adjusted to 0.15-0.95 or 1.05-6.66 through  $\geq 1$  discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05-6.66 or 0.15-0.95, and thereafter the change in the amount added per unit time is made (i) constantly for A and B, and/or (ii) decreasingly for A and ascendingly for B, and/or (iii) decreasingly for B and ascendingly for A, in any sequence, individually or in combination.

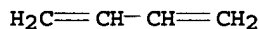
IT 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (process for preparing latex by reaction in gradient regime)  
 RN 114464-60-7 HCAPLUS  
 CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene, sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
 CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
 CCI PMS

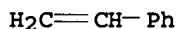
CM 2

CRN 106-99-0  
 CMF C4 H6



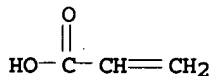
CM 3

CRN 100-42-5  
 CMF C8 H8



CM 4

CRN 79-10-7  
 CMF C3 H4 O2



IC ICM C08F257-02  
 ICS C08F285-00; C08F291-00; C08L055-02; C08F002-22  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 42  
 IT 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(process for preparing latex by reaction in gradient regime)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L103 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:419395 HCAPLUS

DOCUMENT NUMBER: 136:103054

TITLE: On the flammability of the  
electron-beam-induced grafting of ABS and SBS  
copolymers, studied by LOI/CONE/XPS

AUTHOR(S): Wang, Jianqi; Wu, Shaoli

CORPORATE SOURCE: Beijing Institute of Technology School of  
Chemical Engineering & Materials Science,  
National Laboratory of Flame Retardant  
Materials, Beijing, 100081, Peop. Rep. China

SOURCE: Journal of Fire Sciences (2001), 19(2),  
157-172

CODEN: JFSCDV; ISSN: 0734-9041

PUBLISHER: Technomic Publishing Co., Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pre-irradiation of the ABS and SBS copolymers, grafting of monomers (MAA and AA) onto both copolymers (ABS/SBS-g-MAA/AA) and ion exchange of the resulted grafts with cations, such as, Na<sup>+</sup>, K<sup>+</sup>, Mg<sup>2+</sup>, Ca<sup>2+</sup> ABS/SBS-g-MAA/AA-S(Na<sup>+</sup>), K<sup>+</sup>/Mg<sup>2+</sup>, Ca<sup>++</sup> were involved in grafting. A study has been made using the elevated temperature LOI and CONE in this paper focusing on appraisal of the halogen- and phosphorus-free approach imparting flame retardancy to ABS and SBS copolymers and confirmation of carbon accumulation, extent of crosslinking and onset of charring as functions of temperature by the XPS technique. LOI technique at elevated temps. and cone calorimetry based on the oxygen consumption principle give parameters definitely associated with the grafting rate (Gr), such as TI, pk-HRR, SEA, EHC, etc., for each step in grafting. Flammability tests show that the grafting induced by electron beam has led to a large increase in LOI, e.g., ABS-MAA-S(Ca<sup>2+</sup>), + 16.5 units, TI, e.g., SBS-g-MAA-S(Mg), +42.8C; cone (25 kWm): TTI. e.g., ABS-MAA-S(Na), +28% and dramatic decreases in pk-HRR, e.g., ABS-MAA-S(Na), -67%, pk-MLR, e.g., ABS-MAA-S(Ca), -73%, SEAF, e.g., SBS-MAA-S(Ca), -65%, etc. Most exptl. data were studied and confirmed by XPS data.

IT 114464-60-7, Acrylic acid-butadiene-styrene graft  
copolymer sodium salt 389105-52-6 389105-53-7  
389105-56-0

RL: PRP (Properties)

(flammability of electron-beam-induced grafted of ABS and SBS  
copolymers studied by limiting oxygen index/cone calorimetry  
and XPS)

RN 114464-60-7 HCAPLUS

CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,  
sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

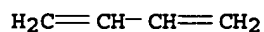
CRN 113974-98-4

CMF (C8 H8 . C4 H6 . C3 H4 O2)x

CCI PMS

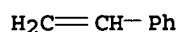
CM 2

CRN 106-99-0  
CMF C4 H6



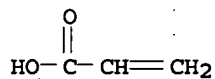
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



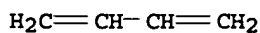
RN 389105-52-6 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,  
graft, potassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
CCI PMS

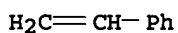
CM 2

CRN 106-99-0  
CMF C4 H6



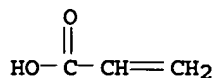
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



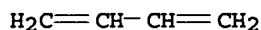
RN 389105-53-7 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,  
graft, calcium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
CCI PMS

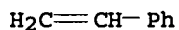
CM 2

CRN 106-99-0  
CMF C4 H6



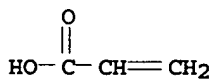
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



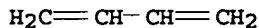
RN 389105-56-0 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,  
graft, magnesium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
CCI PMS

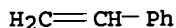
CM 2

CRN 106-99-0  
CMF C4 H6



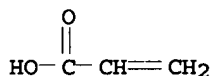
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 35, 39

IT 112572-61-9, Butadiene-methacrylic acid-styrene graft copolymer  
113974-98-4, Acrylic acid-butadiene-styrene graft copolymer  
114464-60-7, Acrylic acid-butadiene-styrene graft  
copolymer sodium salt 389104-12-5, Butadiene-methacrylic  
acid-styrene graft copolymer sodium salt 389104-13-6,  
Butadiene-methacrylic acid-styrene graft copolymer potassium salt  
389104-14-7 389104-15-8 389105-52-6  
389105-53-7 389105-56-0

RL: PRP (Properties)

(flammability of electron-beam-induced grafted of ABS and SBS  
copolymers studied by limiting oxygen index/cone calorimetry  
and XPS)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L103 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:205706 HCAPLUS

DOCUMENT NUMBER: 108:205706

TITLE: Impact-resistant thermoplastic molding  
composition

INVENTOR(S): Echite, Adolf; Schwaben, Hans Dieter;  
Klaerner, Peter

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 8 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| DE 3617361             | A1   | 19871210 | DE 1986-3617361 | 1986<br>0523 |
| EP 250836              | A2   | 19880107 | EP 1987-107390  | 1987<br>0521 |
| EP 250836              | A3   | 19891025 |                 |              |
| EP 250836              | B1   | 19940202 |                 |              |
| R: BE, DE, FR, GB, NL  |      |          |                 |              |
| PRIORITY APPLN. INFO.: |      |          | DE 1986-3617361 | A            |
|                        |      |          |                 | 1986<br>0523 |

AB Radical polymerization of aromatic vinyl monomers and acrylic acid in the presence of an elastomer such as polybutadiene and an ionic crosslinker selected from alkali metal, alkaline earth metal, and Zn salts of C16-22 fatty acids gives an impact-resistant composition for use as moldings. Styrene 88.0, Buna HX 529 C 7.9, acrylic acid 0.4, and Zn stearate were used in the manufacture of a composition having notched impact strength (DIN 53753) 16.5 kJ/m<sup>2</sup>, break elongation 8.7%, Vicat softening temperature 89.7°, and gel content (in toluene) 33.2%.

IT 114464-59-4P, Acrylic acid-butadiene-styrene graft copolymer zinc salt 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt  
 RL: PREP (Preparation)  
 (preparation of impact-resistant)

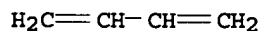
RN 114464-59-4 HCAPLUS  
 CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene, zinc salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
 CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
 CCI PMS

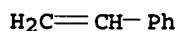
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

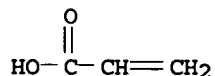
CRN 100-42-5  
 CMF C8 H8



CM 4



CRN 79-10-7  
CMF C3 H4 O2



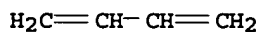
RN 114464-60-7 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,  
sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4  
CMF (C8 H8 . C4 H6 . C3 H4 O2)x  
CCI PMS

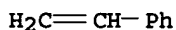
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CRN 106-99-0  
CMF C4 H6



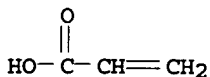
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



IC ICM C08L025-00  
ICS C08L051-04; C08F279-02; C08F279-06; C08F002-44; C08F285-00  
ICA C08F036-06; C08F012-06; C08F220-06; C08F220-10; C08F220-44;  
C08F222-40; C08F222-06  
ICI C08L025-08, C08L033-02  
CC 37-6 (Plastics Manufacture and Processing)  
IT 114464-59-4P, Acrylic acid-butadiene-styrene graft  
copolymer zinc salt 114464-60-7P, Acrylic  
acid-butadiene-styrene graft copolymer sodium salt  
RL: PREP (Preparation)  
(preparation of impact-resistant)

=> => d que stat 1121  
L4 STR

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NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE  
L5 STR

C=C-C-C  
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NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE  
L7 SCR 2043  
L23 STR

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O  
||  
C=O  
@3 4

8  
O  
||  
C=G2  
@7 9

VAR G1=3/7/CN  
VAR G2=N/CN  
NODE ATTRIBUTES:  
CONNECT IS E1 RC AT 5  
CONNECT IS E1 RC AT 8  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE  
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L26 8354 SEA FILE=REGISTRY SSS FUL L4 AND L5 AND L23 AND L7 AND  
L24  
L27 STR

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NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 3  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

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L30 18545 SEA FILE=REGISTRY ABB=ON PLU=ON 107-13-1/CRN  
L31 58027 SEA FILE=REGISTRY ABB=ON PLU=ON 79-10-7/CRN  
L32 13864 SEA FILE=REGISTRY ABB=ON PLU=ON 79-06-1/CRN  
L33 44757 SEA FILE=REGISTRY ABB=ON PLU=ON 79-41-4/CRN  
L34 5511 SEA FILE=REGISTRY ABB=ON PLU=ON 97-65-4/CRN  
L35 10015 SEA FILE=REGISTRY ABB=ON PLU=ON 106-99-0/CRN  
L36 71546 SEA FILE=REGISTRY ABB=ON PLU=ON 100-42-5/CRN  
L37 3042 SEA FILE=REGISTRY ABB=ON PLU=ON ((L30 OR L31 OR L32  
OR L33 OR L34)) AND L35 AND L36  
L41 464105 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX? OR RUBBER? OR  
ELASTOMER?  
L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN  
L44 2101 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 3/NC  
L45 2247 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 4/NC  
L46 724 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 3/NC  
L47 1268 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 4/NC  
L48 27 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 3/NC  
L49 595 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 4/NC  
L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN  
L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50  
L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43  
L53 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON L44  
L54 27642 SEA FILE=HCAPLUS ABB=ON PLU=ON L46  
L55 24591 SEA FILE=HCAPLUS ABB=ON PLU=ON L48  
L56 4674 SEA FILE=HCAPLUS ABB=ON PLU=ON L45  
L57 3895 SEA FILE=HCAPLUS ABB=ON PLU=ON L47  
L58 2954 SEA FILE=HCAPLUS ABB=ON PLU=ON L49  
L59 33121 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55 OR  
L56 OR L57 OR L58)  
L68 98 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT? (2A) REGIM?  
L70 227427 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT?  
L72 17586 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPONENT? (3A) (INCREAS  
? OR DECREAS?)  
L74 70532 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX?  
L76 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55)  
L77 3462 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L74  
L79 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L70  
L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L68  
L81 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L70  
L82 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND L41  
L83 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L82 AND L74  
L85 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L72  
L86 4154 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND (INCR? OR  
DECR? OR CONTINU?)  
L87 1411 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND (TIME? OR  
SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)  
L88 1073 SEA FILE=HCAPLUS ABB=ON PLU=ON L87 AND (TEMP# OR  
TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#  
OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR  
COOL? OR FREEZ? OR FROZ? OR CHILL?)  
L89 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L70  
L90 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (INCR? OR  
DECR? OR CONT?)

L91 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TIME? OR  
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)  
 L92 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TEMP# OR  
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#  
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR  
 COOL? OR FREEZ? OR FROZ? OR CHILL?)  
 L97 61 SEA FILE=HCAPLUS ABB=ON PLU=ON (L79 OR L80 OR L81 OR  
 L82 OR L83) OR L85  
 L98 46 SEA FILE=HCAPLUS ABB=ON PLU=ON (L89 OR L90 OR L91 OR  
 L92)  
 L99 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L97 OR L98  
 L101 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 AND COAT?  
 L102 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 OR L101  
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52  
 L104 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 OR L102  
 L106 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND (WEIGHT? OR  
 WT? OR PERCENT? OR PER(W)CENT? OR PCT?)  
 L107 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND COMPONENT?  
 L108 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 OR L106 OR L107  
 L109 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 AND MOLAR?  
 L110 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 OR L109  
 L111 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L57 AND L70  
 L112 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111  
 L113 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111 OR L112  
 L115 7724 SEA FILE=HCAPLUS ABB=ON PLU=ON COATINGS/CT  
 L116 123267 SEA FILE=HCAPLUS ABB=ON PLU=ON "COATING PROCESS"/CT  
 L117 268501 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING MATERIALS/CT  
 L118 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND ((L115 OR  
 L116 OR L117))  
 L119 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 OR L113  
 L120 60 SEA FILE=HCAPLUS ABB=ON PLU=ON L119 NOT L103  
 L121 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 AND L41

=> d 1121 1-35 ibib abs hitstr hitind

L121 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:519284 HCAPLUS

DOCUMENT NUMBER: 143:79234

TITLE: Polymer gradient functional material  
preparing method

INVENTOR(S): Wu, Gang; Wen, Bianying

PATENT ASSIGNEE(S): Beijing Chemical Industry Univ., Peop. Rep.  
China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu,  
No pp. given  
CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| -----                  | ---- | -----    | -----           |              |
| CN 1510069             | A    | 20040707 | CN 2002-158523  | 2002<br>1225 |
| PRIORITY APPLN. INFO.: |      |          | CN 2002-158523  | 2002<br>1225 |

AB A process for preparing the functional **gradient** polymer material features that according to its requirement to **components** and properties, the raw materials are proportionally and hierarchically fed to the extruder, the **temperature** at outlet of extruder is **controlled** in the fusion **temperature** range of material to extrude out the fused sheet band with 0.25-3 mm of thickness, and the obtained sheet band is wound or overlapped to obtain said **gradient** material.

IT 9003-56-9, ABS resin  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (preparation of polymer **gradient** functional materials)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

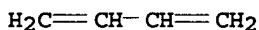
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM C08J003-00

CC 38-2 (Plastics Fabrication and Uses)

ST polymer **gradient** functional material extrusion

IT Carbon fibers, uses  
 Clays, uses  
 Glass fibers, uses  
 Metallic fibers

RL: MOA (Modifier or additive use); USES (Uses)  
 (polymer reinforced with; preparation of polymer **gradient** functional materials)

IT Extrusion of plastics and **rubbers**  
 (preparation of polymer **gradient** functional materials)

IT Polyamides, uses  
 Polyesters, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered

material use); USES (Uses)  
 (preparation of polymer gradient functional materials)  
 IT Polymer blends  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (preparation of polymer gradient functional materials)  
 IT 471-34-1, Calcium carbonate, uses 14807-96-6, Talc, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (polymer reinforced with; preparation of polymer gradient  
 functional materials)  
 IT 9003-07-0, Polypropylene 9003-56-9, ABS resin  
 25038-54-4, Nylon 6, uses  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer  
 in formulation); PYP (Physical process); TEM (Technical or  
 engineered material use); PROC (Process); USES (Uses)  
 (preparation of polymer gradient functional materials)  
 IT 9002-88-4, Polyethylene 9003-53-6, Polystyrene  
 RL: POF (Polymer in formulation); TEM (Technical or engineered  
 material use); USES (Uses)  
 (preparation of polymer gradient functional materials)

L121 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2005 ACS ON STN

ACCESSION NUMBER: 2005:395361 HCAPLUS

DOCUMENT NUMBER: 142:412758

TITLE: Rubber latex, preparation  
 and grafting the latex for impact  
 modifiers

INVENTOR(S): Jeong, Ok-Yeol; Kim, Geon-Soo; Lee, Chan-Hong;  
 Kim, Young-Sim

PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| WO 2005040225 | A1   | 20050506 | WO 2004-KR2754  | 2004<br>1029 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
 MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT,  
 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,  
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,  
 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,  
 CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: KR 2003-76046 A  
 2003  
 1029

AB The rubber latex includes a rubber  
 monomer main component and has a decreasing  
 gel content from a core to a shell(s). The preparation includes  
 polymerizing a core followed by polymerization of a shell(s) which has a lower

X

gel content that the core. The impact modifier is prepared by common graft polymerization using rubber latex as a substrate. The rubber latex has a high gel content core and a low gel content shell(s), and is free from problems involving low or high gel content rubber particles. The rubber latex can be used as substrate for a high efficiency impact modifier with high rubber content and enhanced impact strength and processability.

IT 9003-56-9, Acrylonitrile butadiene styrene copolymer  
 RL: POF (Polymer in formulation); USES (Uses)  
 (rubber of high gel content core and a low gel content shell for latex grafted impact modifier for)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

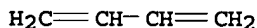
CM 1

CRN 107-13-1  
 CMF C3 H3 N



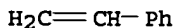
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8



IC ICM C08C001-00  
 ICS C08L055-00; C08L031-02  
 CC 39-4 (Synthetic Elastomers and Natural Rubber)  
 Section cross-reference(s): 37  
 ST rubber high gel core latex impact modifier  
 IT Synthetic rubber, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (butadiene-divinylbenzene, core-shell; rubber of high gel content core and a low gel content shell for latex grafted impact modifier)  
 IT Synthetic rubber, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (butadiene-divinylbenzene-styrene, core-shell; rubber of high gel content core and a low gel content shell for

IT latex grafted impact modifier)  
 IT Polymerization  
 (graft; rubber of high gel content core and a low gel  
 content shell for latex grafted impact modifier)  
 IT Impact modifiers  
 (rubber of high gel content core and a low gel  
 content shell for latex grafted impact modifier)  
 IT Epoxy resins, uses  
 Polyamides, uses  
 Polycarbonates, uses  
 Polyesters, uses  
 RL: POF (Polymer in formulation); USES (Uses)  
 (rubber of high gel content core and a low gel  
 content shell for latex grafted impact modifier for)  
 IT Plastics, uses  
 RL: POF (Polymer in formulation); USES (Uses)  
 (thermoplastics; rubber of high gel content core and  
 a low gel content shell for latex grafted impact  
 modifier for)  
 IT Plastics, uses  
 RL: POF (Polymer in formulation); USES (Uses)  
 (thermosetting plastics; rubber of high gel content  
 core and a low gel content shell for latex grafted  
 impact modifier for)  
 IT 109170-18-5P, Butadiene-divinylbenzene-methyl methacrylate-styrene  
 graft copolymer 110453-27-5P, Butadiene-butyl  
 acrylate-divinylbenzene-methyl methacrylate-styrene graft  
 copolymer 722110-47-6P, Acrylonitrile-allyl methacrylate-  
 butadiene-divinylbenzene-methyl methacrylate-styrene graft  
 copolymer  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);  
 PREP (Preparation); USES (Uses)  
 (rubber of high gel content core and a low gel  
 content shell for latex grafted impact modifier)  
 IT 9002-86-2, Polyvinyl chloride 9003-54-7, Styrene acrylonitrile  
 copolymer 9003-56-9, Acrylonitrile butadiene styrene  
 copolymer 9011-14-7, Methyl methacrylate polymer 25038-59-9,  
 uses  
 RL: POF (Polymer in formulation); USES (Uses)  
 (rubber of high gel content core and a low gel  
 content shell for latex grafted impact modifier for)  
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L121 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:254452 HCAPLUS

DOCUMENT NUMBER: 142:298832

TITLE: Olefin-based thermoplastic alloy, blending  
 and molded parts containing the  
 polymer alloy

INVENTOR(S): Lieberman, Mark

PATENT ASSIGNEE(S): ACI Technologies, LLC, USA

SOURCE: U.S., 17 pp., Cont.-in-part of U.S. Ser. No.  
 921,773.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|



X

|                        |       |                |                |      |
|------------------------|-------|----------------|----------------|------|
| -----                  | ----- | -----          | -----          |      |
| US 6870005             | B1    | 20050322       | US 2002-85334  | 2002 |
|                        |       |                |                | 0228 |
| US 6670421             | B1    | 20031230       | US 2001-921773 | 2001 |
|                        |       |                |                | 0803 |
| PRIORITY APPLN. INFO.: |       | US 2001-921773 | A2             | 2001 |
|                        |       |                |                | 0803 |

AB A polymeric composition contains an olefinic polymer component selected from  $\geq 1$  group which includes polyalkylenes, copolymers of polyalkylenes, and a nonolefinic thermoplastic, and compatibilizers. The nonolefinic and olefinic polymeric components are in random orientable locations in the initial polymeric composition. When injection molded against a temperature gradient, the resulting workpiece composed of the composition has distinctive regions of elevated nonolefinic concentration proximate the outwardly oriented surface and distinctive regions of elevated olefinic polymeric concentration proximate to interior regions of the workpiece. The nonolefinic thermoplastic may be  $\geq 1$  of thermoplastic polyamides, thermoplastic polyolefins and thermoplastic polycarbonates.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)

(olefin-based thermoplastic alloy for making molded parts with regions of nonolefinic thermoplastic at the surface and olefinic thermoplastic in the interior)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

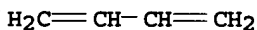
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=CH-Ph

IC ICM C08L083-04  
 INCL 525101000; 428098000; 428475500; 428500000; 525106000; 525166000;  
 525177000; 525179000; 525184000; 525185000  
 CC 37-6 (Plastics Manufacture and Processing)  
 IT Polyamides, uses  
 Polycarbonates, uses  
 Polyesters, uses  
 Polyolefins  
 Thermoplastic rubber  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer  
 in formulation); PYP (Physical process); PROC (Process); USES  
 (Uses)  
 (olefin-based thermoplastic alloy for making molded parts with  
 regions of nonolefinic thermoplastic at the surface and  
 olefinic thermoplastic in the interior)  
 IT 9003-07-0, Polypropylene 9003-56-9, Acrylonitrile-  
 butadiene-styrene copolymer 24968-12-5, Polybutylene  
 terephthalate 25038-59-9, uses 26062-94-2, Polybutylene  
 terephthalate 32131-17-2, uses  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer  
 in formulation); PYP (Physical process); PROC (Process); USES  
 (Uses)  
 (olefin-based thermoplastic alloy for making molded parts with  
 regions of nonolefinic thermoplastic at the surface and  
 olefinic thermoplastic in the interior)  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L121 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:902596 HCAPLUS  
 DOCUMENT NUMBER: 142:57121  
 TITLE: Heterogeneity in Styrene-Butadiene  
 Latex Films  
 AUTHOR(S): Santos, Juliane P.; Corpart, Pascale; Wong,  
 Kenneth; Galembeck, Fernando  
 CORPORATE SOURCE: Institute of Chemistry, Universidade Estadual  
 de Campinas, Campinas, 13083-970, Brazil  
 SOURCE: Langmuir (2004), 20(24), 10576-10582  
 CODEN: LANGD5; ISSN: 0743-7463  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Low-Tg styrene-butadiene (SB) latex films were  
 investigated by noncontact atomic force microscopy and scanning elec.  
 potential microscopy, revealing a number of different morphologies  
 and elec. potential patterns across films cast from the same SB  
 latex dispersions under the same conditions. Surface  
 leveling and charge dispersion throughout the films are, thus,  
 restrained even at temps. above Tg and the min  
 . film-formation temperature An unprecedented elec. pattern  
 is observed, in which the particle cores are more pos. than the  
 contacting particle outer layers. Different packing  
 patterns, including cubic and hexagonal arrays, coexist in  
 neighboring areas. Zonal centrifugation of the SB latex  
 in sucrose d. gradient shows that particles cover a  
 broad range of densities. Thus, film surface heterogeneity is at  
 least partly due to particle heterogeneity. Fractal dimensions of  
 topog. profiles are lower than those of the elec. potential

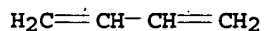
profiles, showing that charge mobility is much more restrained than polymer chain motion at the film surface and that it imposes a limit to the charged chain-ends motion.

IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (heterogeneity in styrene-butadiene latex films)  
 RN 25085-39-6 HCAPLUS  
 CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

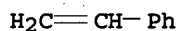
CMF C4 H6



CM 2

CRN 100-42-5

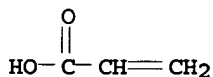
CMF C8 H8



CM 3

CRN 79-10-7

CMF C3 H4 O2



CC 37-5 (Plastics Manufacture and Processing)  
 ST styrene butadiene copolymer latex film particle surface heterogeneity  
 IT Electric potential  
 Fractals  
 Heterogeneity  
 Latex  
 (heterogeneity in styrene-butadiene latex films)  
 IT Electric conductivity  
 Glass transition temperature  
 Particle size  
 Polymer morphology  
 Viscosity  
 Zeta potential  
 (properties of styrene-butadiene latex films)  
 IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (heterogeneity in styrene-butadiene latex films)  
 REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L121 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:729431 HCAPLUS

DOCUMENT NUMBER: 142:412397

TITLE: Novel technique for preparing polymeric  
gradient materials and related  
structure properties

AUTHOR(S): Wen, Bianying; Wu, Gang; Hou, Shaohua

CORPORATE SOURCE: Key Laboratory Beijing City Preparation and  
Processing of Noval Polymer Materials, College  
Materials Sci. Eng., Beijing Univ. Chemical  
Technology, Beijing, 100029, Peop. Rep. China

SOURCE: Fuhe Cailiao Xuebao (2004), 21(3), 151-156

CODEN: FCXUEC; ISSN: 1000-3851

PUBLISHER: Fuhe Cailiao Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB This paper proposes a novel extruding technique for preparing  
polymeric gradient material. A columnar PP/ABS  
gradient material was prepared by use of this method. The  
composition, morphol. structure and mech. properties of the PP/ABS  
gradient material along the radial direction were  
investigated by using DSC, TEM and tensile tests. The results  
indicate that the content of PP gradually  
decreases while ABS gradually increases with  
increasing radius. The TEM photographs show that the  
morphol. also evolves with the varying in the content  
ratio of two polymers. A phase inversion phenomenon was  
recognized in this gradient material. Exptl. facts show  
that the polymeric gradient material can be prepared  
successfully by using this specific extruding technique.

IT 9003-56-9, ABS resins

RL: PEP (Physical, engineering or chemical process); POF (Polymer  
in formulation); PRP (Properties); PYP (Physical process); TEM  
(Technical or engineered material use); PROC (Process); USES  
(Uses)

(extrusion process of polypropylene/ABS gradient  
materials and its morphol. and mech. properties)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

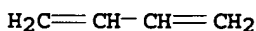
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=CH-Ph

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 36

ST polypropylene ABS resin **gradient** material extrusion morphol mech property

IT Elongation at break  
Extrusion of plastics and **rubbers**  
Tensile strength

(extrusion process of polypropylene/ABS **gradient** materials and its morphol. and mech. properties)

IT Polymer morphology  
(microdomain; extrusion process of polypropylene/ABS **gradient** materials and its morphol. and mech. properties)

IT 9003-07-0, Polypropylene 9003-56-9, ABS resins

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(extrusion process of polypropylene/ABS **gradient** materials and its morphol. and mech. properties)

L121 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:245120 HCAPLUS

DOCUMENT NUMBER: 141:7916

TITLE: An experimental investigation of the large-strain tensile behavior of neat and **rubber**-toughened polycarbonate

AUTHOR(S): Parsons, E.; Boyce, M. C.; Parks, D. M.

CORPORATE SOURCE: Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA

SOURCE: Polymer (2004), 45(8), 2665-2684

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The large-strain tensile behavior of polycarbonate and polycarbonate filled with several volume fractions (f) of **rubber** particles is studied via an optical technique. Digital image correlation is used to determine, in two dimensions, the local displacement **gradients** and full-field displacements during a uniaxial tension test. Full-field strain **contours**, macroscopic true stress-strain behavior, and local volumetric strain are reduced from the raw test data. Full-field strain **contours** exhibit a **decreasing** degree of localization with **increasing** f. The true stress-strain results show a **decrease** in modulus, yield stress, post-yield strain softening, and subsequent strain hardening with **increasing** f. The volumetric strain **decreases** with **increasing** f as well. In the case of the neat polymer, comparisons are made to a

three-dimensional finite element simulation.

IT 107080-92-2, Butadiene-methyl methacrylate-styrene graft copolymer  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (rubber, core-shell particles; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

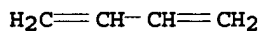
RN 107080-92-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

CMF C4 H6



CM 2

CRN 100-42-5

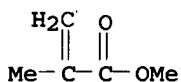
CMF C8 H8



CM 3

CRN 80-62-6

CMF C5 H8 O2



CC 37-5 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 39

ST tensile stress strain bisphenol A polycarbonate butadiene graft rubber

IT Butadiene rubber, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (Me methacrylate- and styrene-grafted, 5, 15, and 25%; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

IT Stress-strain relationship  
 Tensile strength  
 (large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

IT Polycarbonates, properties  
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
 (large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

- IT Stress, mechanical  
(yield; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber -toughened polycarbonate)
- IT 25037-45-0, Bisphenol A-carbonic acid copolymer  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(assumed monomers; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber -toughened polycarbonate)
- IT 9003-17-2  
RL: MOA (Modifier or additive use); USES (Uses)  
(butadiene rubber, Me methacrylate- and styrene-grafted, 5, 15, and 25%; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)
- IT 24936-68-3, Makrolon 2608, properties  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber -toughened polycarbonate)
- IT 107080-92-2, Butadiene-methyl methacrylate-styrene graft copolymer  
RL: MOA (Modifier or additive use); USES (Uses)  
(rubber, core-shell particles; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:422831 HCAPLUS

DOCUMENT NUMBER: 136:402921

TITLE: Plastic moldings containing recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus  
INVENTOR(S): Nagayasu, Kozo; Miyashita, Takuya; Yoshikawa, Nobumasa

PATENT ASSIGNEE(S): Kawasaki Heavy Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| JP 2002160244 | A2   | 20020604 | JP 2000-358943  | 2000<br>1127 |
| JP 3445239    | B2   | 20030908 | JP 2000-358943  | 2000<br>1127 |

PRIORITY APPLN. INFO.: JP 2000-358943

- AB The moldings comprises  $\geq 1$  virgin plastic and  $\geq 1$  waste plastic, wherein ratio of virgin plastic is high in their surface and ratio of recycled plastics become higher as distance become far from the surface. A virgin polyamides-ABS mixture containing glass and C short fibers is placed with a recycled

colored polyamides-ABS mixture **containing** glass and C short fibers to have composition **gradient** in a mold and heated to give a molding showing good impact resistance.

IT 9003-56-9, ABS resin  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (plastic moldings **containing** recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

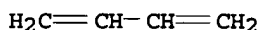
CMF C3 H3 N



CM 2

CRN 106-99-0

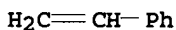
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM B29C043-20  
 ICS B29B017-00; B29C031-06; B29C043-34; B29C045-16; B32B005-14; B29K105-26

CC 38-3 (Plastics Fabrication and Uses)

ST molding recycled plastic compn **gradient** manuf; polyamide  
 ABS molding peeling resistance moldability

IT Recycling of plastics and **rubbers**  
 (plastic moldings **containing** recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

IT Polyamides, uses  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (plastic moldings **containing** recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

IT 9003-56-9, ABS resin  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (plastic moldings **containing** recycled plastics having



good moldability and peeling resistance, their manufacture, and apparatus)

L121 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:289216 HCAPLUS

DOCUMENT NUMBER: 137:64106

TITLE: Variations in surface gloss on parts made by gas assisted injection moulding

AUTHOR(S): Liu, Shih-Jung; Lin, I-Hsuan

CORPORATE SOURCE: Department of Mechanical Engineering, Chang Gung University, Tao-Yuan, 333, Taiwan

SOURCE: Plastics, Rubber and Composites (2002), 31(1), 28-35

CODEN: PRUCFN; ISSN: 1465-8011

PUBLISHER: Maney Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Gas assisted injection molding has proved to be a breakthrough in molding technol. for thermoplastic materials. However, there are still unsolved problems that limit the overall success of this technique. The aim of this work was to study the phenomenon of gloss variations occurring across the surfaces of gas assisted injection molded parts. Expts. were carried out on an 80 t injection molding machine equipped with a high pressure, nitrogen gas injection unit. The materials used were pigmented acrylonitrile/butadiene/styrene copolymer and polypropylene. A plate cavity with a gas channel across its center was used to mold the parts. Various processing parameters were varied: melt temperature; mold temperature; melt filling speed; short shot size; gas pressure; and gas injection delay time. After molding, a glossmeter was used to determine the effects of these processing parameters on the surface gloss profiles of the parts. A roughness meter and scanning electronic microscope were also employed to characterize the surface quality of molded parts. In addition, a numerical anal. of the filling process was carried out to help better understand the mechanisms responsible for the phenomenon of surface gloss variations. It was found that the surface gloss difference occurs mainly in the transition area between channel and plate in the molded parts, which might be the result of the shear stress gradient in the polymer melt during the filling process. Surface roughness of molded parts might also be another factor resulting in the gloss difference problem.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); PYP (Physical process); PROC (Process)

(variations in surface gloss on parts made by gas assisted injection molding)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

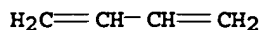
CM 1

CRN 107-13-1

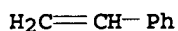
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CC 38-3 (Plastics Fabrication and Uses)  
IT Molding of plastics and rubbers  
(injection, gas-assisted; variations in surface gloss on parts made by gas-assisted injection molding)  
IT 9003-07-0, Polypropylene 9003-56-9, Acrylonitrile-butadiene-styrene copolymer  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)  
(variations in surface gloss on parts made by gas assisted injection molding)  
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:656347 HCAPLUS

DOCUMENT NUMBER: 135:345298

TITLE: Membrane inflation of polymeric materials: experiments and finite element simulations

AUTHOR(S): Li, Yong; Nemes, James A.; Derdouri, A. A.

CORPORATE SOURCE: Mechanical Engineering Department, McGill University, Montreal, QC, H3A 2K6, Can.

SOURCE: Polymer Engineering and Science (2001), 41(8), 1399-1412

CODEN: PYESAZ; ISSN: 0032-3888

PUBLISHER: Society of Plastics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

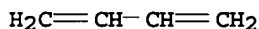
AB A high-speed optical measurement system, which is capable of measuring transient surface shape, is used in the polymer membrane inflation expts. The accurate measurement data, which is an array of points, with known Cartesian coordinates and with respect to a fixed coordinate system, provides a source for further bubble shape anal. Inflation pressure is correlated with each bubble shape measurement. The measured results reveal the importance of the thermal warpage and temperature gradient in the bubble inflation tests. Potential errors in the material parameter calcn., which are caused by assuming uniform temperature and zero thermal warpage, are pointed out. Consequently, a finite element anal. has been carried out to simulate the membrane inflation with/without thermal warpage and the temperature gradient. The material parameters obtained considering the thermal warpage and

temperature gradient yield improved agreement with the exptl. data. Although in this paper the measurement data is mainly used for the determination of the material parameters in the bubble inflation tests, they are also a source of validating other computer-aided simulations as well as in the study of the thermal shrinkage of polymer products.

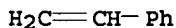
IT 9003-56-9, ABS  
 RL: PRP (Properties)  
 (expts. and finite element simulations for membrane inflation of polymeric materials)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 107-13-1  
 CMF C3 H3 N



CM 2  
 CRN 106-99-0  
 CMF C4 H6



CM 3  
 CRN 100-42-5  
 CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)  
 IT Deformation (mechanical)  
 Membranes, nonbiological  
 Molding of plastics and rubbers  
 (expts. and finite element simulations for membrane inflation of polymeric materials)  
 IT 9003-56-9, ABS  
 RL: PRP (Properties)  
 (expts. and finite element simulations for membrane inflation of polymeric materials)  
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2001:585297 HCAPLUS  
 DOCUMENT NUMBER: 135:273609  
 TITLE: Glossy difference on the surface of gas assisted injection molded parts

AUTHOR(S): Liu, Shih-Jung; Lin, I-Hsuan  
 CORPORATE SOURCE: Polymer Rheology and Processing Laboratory,  
 Department of Mechanical Engineering, Chang  
 Gung University, Tao-Yuan, 333, Taiwan  
 SOURCE: Polymeric Materials Science and Engineering  
 (2001), 85, 504-505  
 CODEN: PMSEDG; ISSN: 0743-0515  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The effect of different processing factors on the glossy  
 difference of gas assisted injection molded parts of ABS copolymer  
 and polypropylene was studied. The occurrence of the surface  
 glossy difference results from the shear stress gradient  
 of polymer melt during the filling process. Surface roughness of  
 molded parts might be another factor resulting in the glossy  
 difference problem. The formation mechanism of surface glossy  
 difference was explained and steps can thus be taken to ensure  
 that the glossy difference be minimized. This provides  
 significant advantages in improving product quality of gas  
 assisted injection-molded parts.

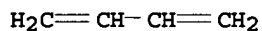
IT 9003-56-9, ABS copolymer  
 RL: PEP (Physical, engineering or chemical process); PRP  
 (Properties); PROC (Process)  
 (glossy difference on surface of gas assisted injection molded  
 parts)

RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
 (9CI) (CA INDEX NAME)

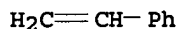
CM 1

CRN 107-13-1  
CMF C3 H3 N

CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CC 37-5 (Plastics Manufacture and Processing)  
 IT Molding of plastics and rubbers  
 (injection; glossy difference on surface of gas assisted

IT 9003-07-0, Polypropylene 9003-56-9, ABS copolymer  
 RL: PEP (Physical, engineering or chemical process); PRP  
 (Properties); PROC (Process)  
 (glossy difference on surface of gas assisted injection molded  
 parts)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L121 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:851733 HCAPLUS

DOCUMENT NUMBER: 134:116967

TITLE: Preparation of thermoplastic elastomer  
 using SBR latex interpenetrating  
 network polymerization

AUTHOR(S): Shi, Shuxian; Kou, Yi; Xia, Yuzheng; Dong,  
 Hanpeng; Li, Xiaoyu

CORPORATE SOURCE: College Materials Sci. Eng., Beijing Univ.  
 Chemical Technology, Beijing, 100029, Peop.  
 Rep. China

SOURCE: Hecheng Xiangjiao Gongye (2000), 23(6),  
 348-351

CODEN: HXGOEA; ISSN: 1000-1255

PUBLISHER: Hecheng Xiangjiao Gongye Zazhi Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A new kind of core-shell latex with gradient  
 distribution of hard polymer which based on SBR (styrene-butadiene  
 rubber) latex was synthesized through two stage  
 emulsion polymerization in order to prepare interpenetrating polymer  
 network. Styrene (St), Me methacrylate (MMA), and acrylonitrile  
 (AN) were selected as hard monomer and a redox initiation system  
 was used. The effects on mech. properties and polymerization of hard  
 monomers and crosslinker were studied. The morphol. of the  
 materials was determined by transmission electron microscopy that the  
 latex particles appeared as core-shell structure with hard  
 polymer gradient distributed. The mech. properties of  
 the SBR/P (St + MMA) interpenetrating polymer networks reached the  
 tensile strength 9.3 MPa. The resulting materials were able to be  
 reprocessed like thermoplastic elastomer.

IT 107080-92-2P, 1,3-Butadiene-methyl methacrylate-styrene  
 graft copolymer

RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)

(rubber; preparation of thermoplastic elastomer  
 using SBR latex interpenetrating network polymerization)

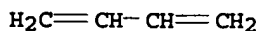
RN 107080-92-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

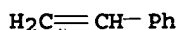
CRN 106-99-0

CMF C4 H6



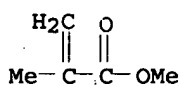
CM 2

CRN 100-42-5  
CMF C8 H8



CM 3

CRN 80-62-6  
CMF C5 H8 O2



- CC 39-4 (Synthetic Elastomers and Natural Rubber)
- ST styrene butadiene rubber latex  
interpenetrating network; methyl methacrylate styrene butadiene  
rubber latex interpenetrating network;  
acrylonitrile styrene butadiene rubber latex  
interpenetrating network
- IT Crosslinking agents  
(effect on properties of thermoplastic elastomer  
prepared using SBR latex interpenetrating network  
polymerization)
- IT Thermoplastic rubber  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(effect on properties of thermoplastic elastomer  
prepared using SBR latex interpenetrating network  
polymerization)
- IT Polymerization  
(emulsion, seed; preparation of thermoplastic elastomer  
using SBR latex interpenetrating network polymerization)
- IT Styrene-butadiene rubber, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(graft polymers, with Me methacrylate; preparation of thermoplastic  
elastomer using SBR latex interpenetrating  
network polymerization)
- IT Interpenetrating polymer networks  
Latex  
(preparation of thermoplastic elastomer using SBR  
latex interpenetrating network polymerization)
- IT Styrene-butadiene rubber, properties  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(preparation of thermoplastic elastomer using SBR  
latex interpenetrating network polymerization)
- IT Elongation, mechanical  
Polymer morphology  
Tensile strength  
(properties of thermoplastic elastomer prepared using  
SBR latex interpenetrating network polymerization)
- IT Strength  
(tearing; properties of thermoplastic elastomer  
prepared using SBR latex interpenetrating network  
polymerization)

- IT 1680-21-3, Triethylene glycol diacrylate  
RL: MOA (Modifier or additive use); USES (Uses)  
(crosslinking agent effect on properties of thermoplastic elastomer prepared using SBR latex interpenetrating network polymerization)
- IT 9017-43-0P, Divinylbenzene-methyl methacrylate-styrene copolymer  
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(crosslinking agent effect on properties of thermoplastic elastomer prepared using SBR latex interpenetrating network polymerization)
- IT 9003-53-6P, Polystyrene 25034-86-0P, Methyl methacrylate-styrene copolymer 25213-88-1P, Acrylonitrile-methyl methacrylate-styrene copolymer  
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 107080-92-2P, 1,3-Butadiene-methyl methacrylate-styrene graft copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(rubber; preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 106974-54-3P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(styrene-butadiene rubber, graft polymers, with Me methacrylate; preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 9003-55-8  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(styrene-butadiene rubber, preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)

L121 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:720425 HCAPLUS

DOCUMENT NUMBER: 130:96463

TITLE: Interfacial aspects in the production of advanced viscoelastic composites

AUTHOR(S): Khan, M. B.

CORPORATE SOURCE: Chemtec and Prime Glass, Jhelum, 49480, Pak.

SOURCE: Advanced Materials--97, [Proceedings of the International Symposium on Advanced Materials], 5th, Islamabad, Pak., Sept. 21-25, 1997 (1997), 57-65. Editor(s): Khan, M. Afzal. Dr. A. Q. Khan Research Laboratories Kahuta: Rawalpindi, Pak.

CODEN: 66YJAR

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The integrity and morphol. of the interfacial junction often dictate the mech. and thermal response of multiphase engineering materials. The production of materials with synergistic properties requires the effective generation and consolidation of material interfaces. The paper examines this theme in viscoelastic systems, comprising polymer alloys, reactive composites, elec. insulation and reinforced commodity polymers. Processing protocol is identified through TEM/SEM for the nylon/ABS composite material that allows optimum utilization of reactive compatibilizers. Comparative results show that both

reactivity and miscibility are crucial for a compatibilizer to provide sufficient dispersion and adequate interfacial adhesion between the two phases. In discrete systems, interfacial coupling is normally accomplished by bonding agents which form chemical bridges across the particle-matrix interface. A recent technique, however, utilizes a lateral modulus gradient across the material interface to increase fracture energy (Mech. approach). Micromorphol. of a conventional composite sans bonding agent is compared with the latter modified via the mech. approach. Cryo-fracture surfaces of these composites reveal good particle-matrix adhesion in the modified composite, as opposed to visible particle pull-out observed in the other composite. A third approach toward interfacial coupling relies on the suitable modification of the particle surface to promote interaction between the particle and the polymer chains. This strategy is examined with particular reference to elec. cable sheathing and synthetic window profile, by using composite particles produced in the author's processing facility. ESCA spectrum of these particles is discussed, along with impact and TGA/DTA data for the modified PVC/EPDM composites. The impact strength of rigid PVC improved over a range of temps., including the important region of zero °C and below. TGA data displayed enhanced thermal stability by the EPDM insulation, that compares well with advanced silicone composites produced by leading manufacturers.

IT 9003-56-9, ABS plastic  
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
 (generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

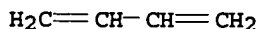
CM 1

CRN 107-13-1  
 CMF C3 H3 N



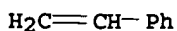
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8





CC 38-3 (Plastics Fabrication and Uses)  
IT EPDM rubber  
Polyamides, uses  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)  
IT 9002-86-2, PVC 9003-56-9, ABS plastic  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1997:387151 HCAPLUS  
DOCUMENT NUMBER: 127:70754  
TITLE: Water uptake of soft lining materials from osmotic solutions  
AUTHOR(S): Parker, S.; Riggs, P. D.; Braden, M.; Kalachandra, S.; Taylor, D. F.  
CORPORATE SOURCE: Department of Biomaterials in Relation to Dentistry, St. Bartholomew's and Royal London School of Medicine and Dentistry, London, E12 AD, UK  
SOURCE: Journal of Dentistry (1997), 25(3-4), 297-304  
CODEN: JDENAB; ISSN: 0300-5712  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

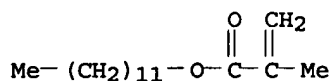
AB The water uptake characteristics of soft lining materials are of obvious importance in that they are expected to function in the oral environment. Results for Novus show a very high uptake from distilled water. Despite this high uptake, Novus appears to function satisfactorily in the mouth. High water uptake of soft lining materials has been attributed to the presence of water soluble impurities that, on immersion, form solution droplets; the driving force for the uptake being the osmotic gradient between the droplets and the external solution. Uptake should therefore be less from ionic solns. The object of this study was to test the applicability of this theory to Novus and 2 exptl. soft lining materials. Water uptake of 2 exptl. materials and Novus was determined from distilled water and two saline solns. (0.45 and 0.9 M). After 196 days, specimens were desorbed to constant weight and then subjected to a second sorption cycle. Novus had the highest uptake from distilled water at .apprx. 18%, the exptl. materials having an uptake .apprx. 7%. Desorptions were all rapid, min. weight being reached within 1-2 days. Uptakes of the second sorptions from water were all higher. Uptake from saline solns. was .apprx. 1-2% for all materials, uptake from 0.9 M saline being the lowest. Second sorption results from solution were similar to the first. The results obtained support the theory that the high water uptake of elastomeric materials is osmotically driven.  
IT 90588-00-4, 1,3-Butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene copolymer  
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(rubber; water uptake of soft lining materials from osmotic solns.)

RN 90588-00-4 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with 1,3-butadiene, dodecyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

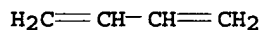
CM 1

CRN 142-90-5  
CMF C16 H30 O2



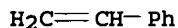
CM 2

CRN 106-99-0  
CMF C4 H6



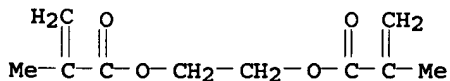
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 97-90-5  
CMF C10 H14 O4



CC 63-7 (Pharmaceuticals)  
IT Synthetic rubber, biological studies  
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene; water uptake of soft lining materials from osmotic solns.)  
IT 90588-00-4, 1,3-Butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene copolymer  
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(rubber; water uptake of soft lining materials from

osmotic solns.)  
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L121 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1997:361121 HCAPLUS  
 DOCUMENT NUMBER: 127:18488  
 TITLE: Manufacture methods for metal oxide/polymer  
 composites with oxide gradient with  
 good heat resistance, mech.  
 properties, and adhesion  
 INVENTOR(S): Haraguchi, Kazutoshi; Murata, Kazutaka; Ono,  
 Yoshiuki  
 PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|-------------|------|----------|-----------------|--------------|
| JP 09087526 | A2   | 19970331 | JP 1995-314030  | 1995<br>1201 |
| JP 3603428  | B2   | 20041222 | JP 1995-179983  | 1995<br>0717 |

PRIORITY APPLN. INFO.: A

AB Title polymers are  $\geq 1$  polymers from polyamides, polyolefins, polyesters, PVC, acrylic resins, polyethylene copolymers, thermoplastic elastomers, polyacetal, fluoropolymers. The oxide gradient (with local ratio  $\geq 1.5$  of the maximum to the min. and continuously changed diameter) was produced by impregnation of polymers in (aqueous) solns. of alkoxides before uniformly distribution of the alkoxides, removal of partial alkoxides from the polymer, impregnation of the alkoxide-containing polymer in (aqueous) solution containing water/catalysts (basic or acidic) and solvents which can swell the polymer, followed by polymerization of alkoxides in vapor phase of the catalysts. Thus, nylon 6 (Ube nylon 1022B) was impregnated with MeOH/water solution at 80. degree. for 3 h to increase weight by 3% and then with tetramethoxysilane at 30° for 5 h; the impregnated sample was dried at room temperature for 5 h and then at 80° at vacuum for 24 h to give a nylon-silica composite with rapid decrease in silica concentration at distance 70-80  $\mu\text{m}$  from the surface, maximum concentration 13% and min. concentration 0 at 20  $\mu\text{m}$  from the surface, and uniformly distributed particles with diameter 10-30  $\mu\text{m}$ .

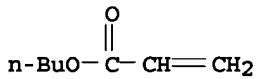
IT 116661-33-7, Cleapact TI 300  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

RN 116661-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene, butyl 2-propenoate and ethenylbenzene, graft (9CI)

(CA INDEX NAME)

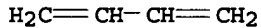
CM 1

CRN 141-32-2  
CMF C7 H12 O2



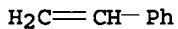
CM 2

CRN 106-99-0  
CMF C4 H6



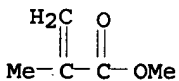
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 80-62-6  
CMF C5 H8 O2



- IC ICM C08L085-00  
ICS C08L101-00
- CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 40, 76
- ST metal oxide **gradient** polymer composite manuf; polyamide  
metal alkoxide **gradient** composite; polyester alkoxide  
**gradient** composite; acrylic resin alkoxide  
**gradient** composite; polyacetal alkoxide **gradient**  
composite; PVC alkoxide **gradient** composite heat  
resistance; ethylene copolymer alkoxide **gradient**  
composite; thermoplastic elastomer alkoxide  
**gradient** composite; fluoropolymer alkoxide  
**gradient** composite adhesion; tetramethoxysilane polymer  
**gradient** composite mech; silica nylon 6 **gradient**  
composite
- IT Fluoropolymers, uses  
RL: TEM (Technical or engineered material use); USES (Uses)

- (1000VLD; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyester rubber  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Grilax E 500; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyesters, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(J 125; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Oxides (inorganic), uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Metal alkoxides  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Acrylic polymers, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Fluoropolymers, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyamides, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyamides, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyesters, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyolefins  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Thermoplastic rubber  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Acetals  
RL: TEM (Technical or engineered material use); USES (Uses)  
(polymers; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat

resistance, mech. properties, and adhesion)

IT 24937-79-9, Poly(vinylidene fluoride)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (1000VLD; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 9011-14-7, Acrylite L  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Acrylite L; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 164325-42-2, Iupital F10  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Iupital F10; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 25038-59-9, J 125, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (J 125; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 12002-26-5, MS 51  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (MS 51 and MS 56; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 26062-94-2, 1,4-Butanediol-terephthalic acid copolymer  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Planac BT 128; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 64-19-7, Acetic acid, uses 67-64-1, Acetone, uses 67-66-3, Chloroform, uses 108-88-3, Toluene, uses 109-99-9, THF, uses 121-44-8, Triethylamine, uses 123-54-6, Acetyl acetone, uses 7647-01-0, Hydrochloric acid, uses 25322-20-7, Tetrachloroethane  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 555-31-7, Triisopropoxyaluminum 681-84-5, Tetramethoxysilane 3173-69-1, Tetraethoxytin 5593-70-4, Tetrabutoxytitanium  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 74-85-1D, Ethylene, copolymers 9002-86-2, PVC 9003-07-0, PY 240B 24968-12-5, Planac BT 128 25038-54-4, Ube nylon 1022B, uses 32131-17-2, Nylon 66, uses 116661-33-7, Cleapact TI 300  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

IT 67-56-1, Methanol, uses 7664-41-7, Ammonia, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (swelling agent; manufacture methods for metal oxide/polymer

composites with oxide gradient with good heat  
resistance, mech. properties, and adhesion)

L121 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:340740 HCAPLUS  
DOCUMENT NUMBER: 126:306138  
TITLE: IR spectroscopic qualitative analysis of  
plastics  
INVENTOR(S): Kreuchwig, Lutz; Lucht, Hartmut  
PATENT ASSIGNEE(S): LLA Umwelttechnische Analytik und Anlagen  
GmbH, Germany  
SOURCE: Ger., 11 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO.  | DATE              |
|------------------------|------|----------|------------------|-------------------|
| DE 19601950            | C1   | 19970403 | DE 1996-19601950 | 1996<br>0110      |
| JP 3239784             | B2   | 20011217 | JP 1997-2694     | 1997<br>0110      |
| PRIORITY APPLN. INFO.: |      |          | DE 1996-19601950 | A<br>1996<br>0110 |

AB An unknown plastic is irradiated with IR light and the spectrum is measured with comparison to a known material in which the spectral gradient and/or the first part of the spectrum for a number of wavelength sections are determined and each gradient value is arranged in one of several normalized value ranges. The gradient values for the wavelength section of the measured spectrum is compared with those of the known material and the gradient coincidences and differences are used to relate the materials. Examples are given for PVC, polyethylene, polypropylene, polystyrene, and ABS polymer. The method may be used as an aid in plastics recycling.

IT 9003-56-9, ABS polymer  
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
(IR spectroscopic qual. anal. of plastics)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

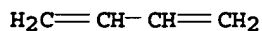
CRN 107-13-1  
CMF C3 H3 N



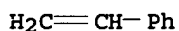
CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8

IC ICM G01N021-35  
ICS G01N033-44; B07C005-342  
CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38  
IT Recycling of plastics and rubbers  
(IR spectroscopic qual. anal. of plastics for)  
IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0,  
Polypropylene 9003-53-6, Polystyrene 9003-56-9, ABS  
polymer  
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
(IR spectroscopic qual. anal. of plastics)

L121 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:427417 HCAPLUS  
DOCUMENT NUMBER: 125:144327  
TITLE: Prediction of process-induced warpage in  
injection molded thermoplastics  
AUTHOR(S): Akay, M.; Ozden, S.; Tansey, Tony  
CORPORATE SOURCE: School of Electrical and Mechanical Eng.,  
Univ. Ulster at Jordanstown, County Antrim,  
BT37 0QB, UK  
SOURCE: Polymer Engineering and Science (1996),  
36(13), 1839-1846  
CODEN: PYESAZ; ISSN: 0032-3888  
PUBLISHER: Society of Plastics Engineers  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The main cause of warpage in injection moldings is the imbalance of the thermal residual stresses that are caused by a nonuniform temperature distribution through the thickness of the moldings resulting from variation in cross sections, part geometries, and temperature difference between the mold surfaces. As the hot plastic melt is injected into the relatively cooler mold, a temperature gradient develops between the core of the molding and its surfaces, determining the magnitude of the residual stresses and warpage deflection. The relationship between the temperature difference of the two halves of the mold and warpage for a flat plate was measured and predicted by use of a finite element software package. The development of warpage in a 3D component (L-shaped bracket) was also measured, and the results were compared with computer predictions. The software correctly predicted the direction of the warpage deflection for Cycolac 35 acrylonitrile-butadiene-styrene copolymer but not for Lexan 143R polycarbonate in L-shaped bracket moldings.

IT 9003-56-9, Cycolac 35



RL: PEP (Physical, engineering or chemical process); PRP  
(Properties); PROC (Process)  
(prediction of process-induced warpage in injection-molded  
thermoplastics using com. software package)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

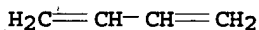
CMF C3 H3 N



CM 2

CRN 106-99-0

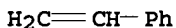
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)

IT Molding of plastics and rubbers

(injection, prediction of process-induced warpage in  
injection-molded thermoplastics using com. software package)

IT 9003-56-9, Cycolac 35 179987-27-0, Lexan 143R

RL: PEP (Physical, engineering or chemical process); PRP  
(Properties); PROC (Process)

(prediction of process-induced warpage in injection-molded  
thermoplastics using com. software package)

L121 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:246096 HCAPLUS

DOCUMENT NUMBER: 120:246096

TITLE: Manufacture of impact-resistant, glossy ABS  
copolymers

INVENTOR(S): Dokukina, L. F.; Gavrichenkova, E. A.;  
Rupyshev, V. G.; Grigoryan, E. V.; Annushkina,  
S. G.

PATENT ASSIGNEE(S): USSR

SOURCE: U.S.S.R. From: Izobreteniya 1992, (43), 208.  
CODEN: URXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| SU 1593180             | A1   | 19921123 | SU 1988-4458430 | 1988<br>0711 |
| PRIORITY APPLN. INFO.: |      |          | SU 1988-4458430 | 1988<br>0711 |

AB The title copolymers are manufactured by bulk copolymn. of styrene with acrylonitrile in the presence of butadiene rubber and a statistical butadiene-styrene diblock copolymer (I) (40-45% styrene) in a cascade of reactors operating with discrete temperature and monomer concentration gradients. I is introduced at a monomer conversion degree corresponding to a numeric value obtained by multiplying butadiene concentration in the starting solution with 1.00-1.45.

IT 106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manufacture of, impact-resistant, with glossy surface)

RN 106677-58-1 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

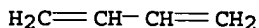
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM C08F279-04

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 39

IT Rubber, butadiene, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(graft polymerization of styrene and acrylonitrile in presence of SBR)

- block copolymer and, in manufacture of impact-resistant glossy ABS)
- IT Rubber, butadiene-styrene, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (block, diblock, graft polymerization of styrene and acrylonitrile in presence of butadiene rubber and, in manufacture of impact-resistant glossy ABS)
- IT Polymerization  
 (graft, mass, of acrylonitrile and styrene in presence of SBR and butadiene rubber, in manufacture of impact-resistant glossy ABS)
- IT 106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manufacture of, impact-resistant, with glossy surface)
- IT 106107-54-4 709030-54-6  
 RL: USES (Uses)  
 (rubber, block, diblock, graft polymerization of styrene and acrylonitrile in presence of butadiene rubber and, in manufacture of impact-resistant glossy ABS)
- IT 9003-17-2  
 RL: USES (Uses)  
 (rubber, graft polymerization of styrene and acrylonitrile in presence of SBR block copolymer and, in manufacture of impact-resistant glossy ABS)

L121 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:78581 HCAPLUS

DOCUMENT NUMBER: 120:78581

TITLE: Linear copolyester containing phosphorous-containing moieties, its preparation, and its use as a flame-retardant additive

INVENTOR(S): Neri, Carlo; Landoni, Gianluigi

PATENT ASSIGNEE(S): Enichem Synthesis S.p.A., Italy

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|---|------|----------|-----------------|--------------|
| EP 547701   | A2   | 19930623 | EP 1992-203902  | 1992<br>1212 |
| EP 547701   | A3   | 19931013 |                 |              |
| EP 547701   | B1   | 19980805 |                 |              |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE |      |          |                 |              |
| AT 169315   | E    | 19980815 | AT 1992-203902  | 1992<br>1212 |
| ES 2120986  | T3   | 19981116 | ES 1992-203902  | 1992<br>1212 |
| CA 2085668  | AA   | 19930619 | CA 1992-2085668 | 1992<br>1217 |
| JP 05331274   | A2   | 19931214 | JP 1992-337116  | 1992         |

US 5550207 A 19960827 US 1994-247525 1217  
 1994  
 0523  
 US 5602212 A 19970211 US 1996-653848 1996  
 0528  
 PRIORITY APPLN. INFO.: IT 1991-MI3399 A 1991  
 1218  
 US 1992-992591 B1 1992  
 1218  
 US 1994-247525 A3 1994  
 0523

AB The polymer is prepared by polymerization of an aromatic dicarboxylic acid, C2-6 alkylene glycol and a carboxyphosphinic acid HO2CR1P(O)(OH)R2 [R1 = (cyclo)alkylene, R2 = C1-6 alkyl or Ph] to give a polymer with ≥2.5 wt% phosphorous content. Thus, 2-methyl-1,2-oxaphospholan-5-one oxide and ethylene glycol (I) was reacted at 120-130°, excess I was distilled, and the product was reacted with poly(ethylene terephthalate) prepolymer containing Sb2O3 at 250-275° to give a copolyester with 4.29 % P, melting gradient 20.14 J/g and peak m.p. 177.8°. The products are useful as flame retardants during melt processing of polymers.

IT 9003-56-9, Abs resin  
 RL: USES (Uses)  
 (fireproofing additives for, containing melt-processable phosphorous-containing block copolyesters)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

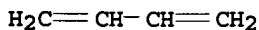
CM 1

CRN 107-13-1  
 CMF C3 H3 N



CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8

H<sub>2</sub>C=CH-Ph

IC ICM C08G063-692  
ICS C08L067-02

CC 37-6 (Plastics Manufacture and Processing)

ST flame retardant phosphorous **contg** polyester;  
polyethylene terephthalate fireproofing agent

IT Polyoxyphenylenes  
Rubber, ethylene-propene  
RL: USES (Uses)  
(fireproofing additives for, **containing** melt-processable  
phosphorous-**containing** block copolyesters)

IT Polyamides, miscellaneous  
Polycarbonates, miscellaneous  
RL: MSC (Miscellaneous)  
(fireproofing additives for, **containing** melt-processable  
phosphorous-**containing** block copolyesters)

IT Fireproofing agents  
(phosphorous-**containing** block copolyesters,  
melt-processable, for polymers)

IT Plastics, molded  
RL: USES (Uses)  
(polymer blends, fireproofing additives for, **containing**  
melt-processable phosphorous-**containing** block  
copolyesters)

IT Rubber, synthetic  
RL: USES (Uses)  
(EPDM, fireproofing additives for, **containing**  
melt-processable phosphorous-**containing** block  
copolyesters)

IT Rubber, synthetic  
RL: USES (Uses)  
(ethylene-vinyl acetate, fireproofing additives for,  
**containing** melt-processable phosphorous-**containing**  
block copolyesters)

IT Polyesters, uses  
RL: USES (Uses)  
(phosphinate group-**containing**, fireproofing additives  
**containing**, melt-processable, for polymers)

IT Alkenes, polymers  
RL: USES (Uses)  
( $\alpha$ -, polymers, fireproofing additives for, **contg**  
melt-processable phosphorous-**containing** block  
copolyesters)

IT 152448-40-3 152448-41-4  
RL: USES (Uses)  
(fireproofing additives **containing**, melt-processable, for  
polymers)

IT 9003-53-6, Polystyrene 9003-54-7, SAN (polymer)  
9003-56-9, Abs resin 24937-78-8, Ethylene-vinyl acetate  
copolymer 24968-12-5, Poly(butylene terephthalate) 25038-59-9,  
Poly(ethylene terephthalate), miscellaneous 26062-94-2,  
1,4-Butanediol-terephthalic acid copolymer  
RL: USES (Uses)  
(fireproofing additives for, **containing** melt-processable  
phosphorous-**containing** block copolyesters)

IT 74-85-1  
RL: USES (Uses)  
(**rubber**, EPDM, fireproofing additives for,

containing melt-processable phosphorous-containing  
block copolyesters)

IT 9010-79-1

RL: USES (Uses)

(rubber, fireproofing additives for, containing  
melt-processable phosphorous-containing block  
copolyesters)

L121 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:518860 HCAPLUS

DOCUMENT NUMBER: 119:118860

TITLE: Effect of shearing heat generation  
in the capillary rheometer on the viscosity of  
ABS polymer melt

AUTHOR(S): Nagai, Makoto; Jimma, Takashi

CORPORATE SOURCE: Nagaoka Coll. Technol., Nagaoka, 940, Japan

SOURCE: Sosei to Kako (1992), 33(380), 1074-9

CODEN: SOKAB9; ISSN: 0038-1586

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB An anal. model and coordinate system for the title anal. are  
presented. The anal was made for 5 assumptions; basic equations,  
boundary conditions, and the calculating procedures were described. An  
apparatus with the capillary nozzle of 0.5mm in diameter and 15 mm long  
was operated with a screw plunger of an injection machine in order  
to work at high shear rate of >105 s-1; the resin temps.  
at inlet and outlet reservoir were measured. Exptl. and anal.  
results on volumetric stroke, outlet temperature, mean shear  
stress at capillary wall, temperature distribution, and  
velocity gradient distribution are presented. Exptl.  
and anal. data (obtained using independent viscosity model) for  
shear stress and outlet temperature were in good agreement.  
The results were interpreted in terms of retardation of viscosity  
change. In case of in-mold high-shear-rate flow through long  
runner and cavity, it was expected that the viscosity retardation  
takes place and therefore the quant. estimation of relaxation  
phenomenon is necessary.

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(viscosity of melt of, effect of shearing heat  
generation in capillary rheometer on)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

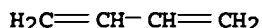
CMF C3 H3 N



CM 2

CRN 106-99-0

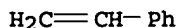
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



- CC 38-2 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 37
- ST ABS polymer viscosity shearing **heat**; **heat**  
 capillary rheometer viscosity ABS; injection molding ABS shearing  
**heat**
- IT Molding of plastics and rubbers  
 (injection, of ABS polymer, effect of shearing **heat**  
 generation in capillary rheometer on melt viscosity in relation  
 to)
- IT 9003-56-9, ABS polymer  
 RL: USES (Uses)  
 (viscosity of melt of, effect of shearing **heat**  
 generation in capillary rheometer on)

L121 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:153262 HCAPLUS

DOCUMENT NUMBER: 116:153262

TITLE: Formation and break-up of a bead-and-string  
 structure during injection molding of a  
 polycarbonate/acrylonitrile-butadiene-styrene  
 blend

AUTHOR(S): Lee, M. P.; Hiltner, A.; Baer, E.

CORPORATE SOURCE: Cent. Appl. Polym. Res., Case West. Reserve  
 Univ., Cleveland, OH, 44106, USA

SOURCE: Polymer (1992), 33(4), 675-84  
 CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The morphol. gradient through the thickness of an  
 injection-molded blend of 10:90 ABS resin-polycarbonate (PC) was  
 characterized. Brittle fracture surfaces were etched and examined  
 both parallel and perpendicular to the injection direction in the  
 scanning electron microscope. In the center of the plaque, the  
 morphol. was isotropic with the ABS phase dispersed in the PC  
 matrix as large composite **rubber** particles .apprx.1  
 $\mu\text{m}$  in diameter and smaller particles of free SAN .apprx.0.3  $\mu\text{m}$   
 in diameter. At about half the distance from the center to the edge,  
 the morphol. of the free SAN phase changed from predominantly  
 spherical to predominantly stringlike. The SAN strings connected  
 the **rubber** particles to form an oriented ABS  
 bead-and-string structure that was essentially continuous  
 in the injection direction. The free SAN was highly extended  
 under elongational or shear flow while remaining attached to the  
**rubber** particles because of miscibility with grafted SAN.  
 The morphol. gradient through the thickness was created  
 by the competition between the relaxation rate and the  
**cooling** rate after mold filling. In this case, relaxation  
 was thought to occur by interfacial-tension-driven break-up and

X

end-pinching mechanisms to produce the dispersion of rubber and free SAN particles. Evidence to support the break-up mechanism was obtained when annealing above the glass transition temperature of PC for a matter of seconds, the time scale of mold cooling, caused the bead-and-string structure to convert to a dispersion of composite rubber particles and SAN particles.

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(polycarbonate blends, morphol. of injection-molded, bead-and-string structure in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

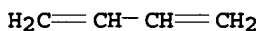
CMF C3 H3 N



CM 2

CRN 106-99-0

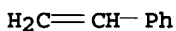
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT Molding of plastics and rubbers

(injection, of polycarbonate-ABS resin blends, morphol. of, bead-and-string structure in)

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(polycarbonate blends, morphol. of injection-molded, bead-and-string structure in)

L121 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:609591 HCAPLUS

DOCUMENT NUMBER: 115:209591

TITLE: The effect of the internal stresses on the dynamic mechanical properties of the injection molded products

AUTHOR(S): Rohn, C.; Herh, P.

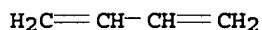
CORPORATE SOURCE: Rheometrics, Inc., Piscataway, NJ, 08854, USA



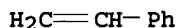
SOURCE: Muanyag es Gumi (1991), 28(6), 129-32  
CODEN: MUGUAO; ISSN: 0027-2914  
DOCUMENT TYPE: Journal  
LANGUAGE: Hungarian  
AB The temperature-dependent storage modulus and loss tangent are measured for polystyrene, polypropylene, HDPE, nylon 66, and ABS. The elastic stress (modulus), which forms as a result of temperature gradient and rheol. during injection molding of thermoplastic materials is dynamically determined. The loss tangent is especially sensitive to this stress, which is explained by the mobility and rearrangement of the chain structure.  
IT 9003-56-9, ABS polymer  
RL: USES (Uses)  
(dynamic mech. properties of injection-molded, internal stress effect on)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)  
CM 1  
CRN 107-13-1  
CMF C3 H3 N



CM 2  
CRN 106-99-0  
CMF C4 H6



CM 3  
CRN 100-42-5  
CMF C8 H8



CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 37  
IT Molding of plastics and rubbers  
(injection, internal stress formation during, dynamic mech. properties in relation to)  
IT 9003-07-0, Polypropylene 9003-53-6 9003-56-9, ABS polymer 32131-17-2, Nylon 66, properties  
RL: USES (Uses)  
(dynamic mech. properties of injection-molded, internal stress effect on)

L121 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1991:63673 HCAPLUS  
DOCUMENT NUMBER: 114:63673

TITLE: Thermal contact resistance  
in injection molding  
AUTHOR(S): Yu, Chi J.; Sunderland, J. E.; Poli, C.  
CORPORATE SOURCE: Dep. Mech. Eng., Univ. Massachusetts, Amherst,  
MA, 01003, USA  
SOURCE: Polymer Engineering and Science (1990),  
30(24), 1599-606  
CODEN: PYESAZ; ISSN: 0032-3888  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A method is described for obtaining the thermal contact resistance (TCR) between an injection molded thermoplastic part and its mold. Without TCR, the simulated cooling times obtained from POLYCOOL II, a computer-aided engineering (CAE) package for cooling simulation of injection molding, compared poorly with both field and exptl. data. An improvement in the accuracy of the simulated data resulted from making TCR an input to POLYCOOL II. TCR was obtained through a combination of exptl. and anal. procedures. Expts. were performed to obtain the part surface temperature distribution and the inside cavity pressure gradient. The part surface temperature distribution was then used as a boundary condition in thermal anal. The inside cavity pressure gradient was used as a basis for determining the inside cavity shrinkage. The results showed that, because of the thermal expansion of thermoplastics, the compressibility of the plastic melt, and the mold deformation, the inside cavity shrinkage was decreased as the thickness of the part was increased. Therefore, the TCR value of a thicker part was lower than that of a thinner part. The effects of both part thickness and process parameters, such as temperature and pressure, on TCR are also discussed.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer  
RL: USES (Uses)

(injection molding of, cooling model for,  
thermal contact resistance in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

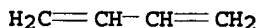
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8

H<sub>2</sub>C=CH-Ph

CC 38-2 (Plastics Fabrication and Uses)  
ST **thermal contact** resistance injection molding;  
cooling model plastic injection molding; computer program  
cooling model molding; surface **temp** distribution  
plastic molding  
IT Computer program  
(for cooling simulation of injection molding of  
plastics, **thermal contact** resistance effect  
on accuracy of, POLYCOOL II)  
IT **Cooling**  
(in injection molding of plastic parts, model for,  
**thermal contact** resistance in)  
IT Process simulation, physicochemical  
(of cooling in injection molding of plastics,  
**thermal contact** resistance in)  
IT **Thermal analysis**  
(of injection molded plastic parts, surface **temperature**  
distribution as boundary condition in)  
IT **Surface**  
(**temperature** distribution in, of injection molded plastic  
parts, as boundary condition in **thermal anal.**)  
IT **Thermal conductivity and conduction**  
(through **contact**, in injection molding of plastics,  
cooling model in relation to)  
IT **Molding of plastics and rubbers**  
(injection, of ABS, **thermal contact**  
resistance in, cooling model in relation to)  
IT **Molding apparatus for plastics and rubbers**  
(injection molds, **thermal contact**  
resistance between molded part and, cooling model in  
relation to)  
IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer  
RL: **USES (Uses)**  
(injection molding of, cooling model for,  
**thermal contact** resistance in)

L121 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1989:58405 HCAPLUS

DOCUMENT NUMBER: 110:58405

TITLE: Changes in the structure of latex  
particles by the incorporation of hydrophilic  
comonomers

AUTHOR(S): Rahlwes, D.; Kranz, D.

CORPORATE SOURCE: Leverkusen, Fed. Rep. Ger.

SOURCE: Kautschuk Gummi Kunststoffe (1988), 41(7),  
669-73

CODEN: KGUKAC; ISSN: 0022-9520

DOCUMENT TYPE: Journal

LANGUAGE: German

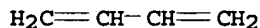
AB Incorporation of small amts. of hydrophilic comonomers in polymer  
dispersions resulted in technol. changes which did not  
significantly alter the geometry of the latex particle.  
When higher levels of hydrophilic comonomers were added, a  
significant change in particle structure and morphol. was observed  
which depended on the polymerization process and the degree of

crosslinking. The latex particles and changes caused by the addition of hydrophilic monomers were analyzed by electron photomicrog., d. gradient ultracentrifuge techniques, and titrimetric methods. A model of the binder function in polymer dispersions, carboxylation of the shell of the particles, and changes in the particle geometry were discussed. The morphol. of the particle depended on the polymerization process.

IT 9010-93-9, Butadiene-methacrylic acid-styrene copolymer  
 RL: PRP (Properties)  
 (morphol. and geometry of particles of)  
 RN 9010-93-9 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

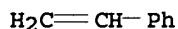
CM 1

CRN 106-99-0  
 CMF C4 H6



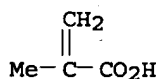
CM 2

CRN 100-42-5  
 CMF C8 H8



CM 3

CRN 79-41-4  
 CMF C4 H6 O2



CC 36-2 (Physical Properties of Synthetic High Polymers)  
 Section cross-reference(s): 35  
 IT 9010-92-8, Methacrylic acid-styrene copolymer 9010-93-9,  
 Butadiene-methacrylic acid-styrene copolymer 27341-67-9  
 RL: PRP (Properties)  
 (morphol. and geometry of particles of)

L121 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1989:24691 HCAPLUS

DOCUMENT NUMBER: 110:24691

TITLE: Effects of internal strains on injection-molded parts

AUTHOR(S): Rohn, Charles L.; Herh, Peter K. W.

CORPORATE SOURCE: Rheometrics, Inc., Piscataway, NJ, USA

SOURCE: Plastics Engineering (Brookfield, CT, United States) (1988), 44(10), 33-6  
 CODEN: PLEGBB; ISSN: 0091-9578

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Dynamic mech. tests were used to measure the elastic strains in injection-molded thermoplastics resulting from **thermal gradient** and flow orientation in injection molding. The  $\tan \delta$  in the region of major transitions (e.g., glass transition) was particularly sensitive to elastic strains. Results for HDPE, ABS, polystyrene, polypropylene, and nylon 66 were shown.

IT 9003-56-9, ABS copolymer  
RL: USES (Uses)  
(elastic strain in injection-molded, dynamic mech. properties in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

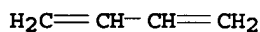
CM 1

CRN 107-13-1  
CMF C3 H3 N



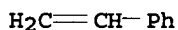
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38

IT Glass **temperature** and transition  
Mechanical loss  
(of injection-molded thermoplastics, elastic strains in relation to)

IT Molding of plastics and **rubbers**  
(injection, elastic strains in thermoplastics during, dynamic mech. properties in relation to)

IT 9003-07-0, Polypropylene 9003-53-6, Polystyrene  
9003-56-9, ABS copolymer 32131-17-2, Nylon 66, properties  
RL: USES (Uses)  
(elastic strain in injection-molded, dynamic mech. properties in relation to)

L121 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1987:441359 HCAPLUS  
 DOCUMENT NUMBER: 107:41359  
 TITLE: Composite moldings with gradually changing  
 ingredient concentration  
 INVENTOR(S): Sugata, Hiroyuki; Yuasa, Satoshi; Hamamoto,  
 Takashi; Haruta, Masahiro; Mizusawa,  
 Nobutoshi; Osabe, Kuniiji  
 PATENT ASSIGNEE(S): Canon K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| JP 62070036            | A2   | 19870331 | JP 1985-210283  | 1985<br>0925 |
| PRIORITY APPLN. INFO.: |      |          | JP 1985-210283  | 1985<br>0925 |

AB Composites with  $\geq 2$  ingredients with 1 ingredient gradually  
 changing concentration toward  $\geq 1$  direction have an effective  
 distribution of the specific ingredient. Thus, a suspension of  
 PET polyester microsphere and a suspension of CrO<sub>2</sub> magnet  
 particles were poured in a cylindrical filter and pressed to give  
 a molding having higher magnet concentration on 1 side.

IT 9003-56-9, ABS polymer  
 RL: USES (Uses)  
 (powdered, microspheres, additive blends, for moldings with  
 gradually changing additive concentration)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
 (9CI) (CA INDEX NAME)

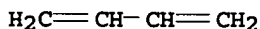
CM 1

CRN 107-13-1  
 CMF C3 H3 N



CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8

H<sub>2</sub>C=CH-Ph

IC ICM B32B005-14  
ICS B22D019-00; B22F003-02; C04B035-00; C22C001-05; C22C001-10;  
C22C032-00; C22C033-02; C22C033-04  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 77  
ST concn **gradient** multiingredient composite; PET  
microsphere magnet particle composite; distribution  
**gradient** ingredient magnetic composite  
IT Acrylic polymers, uses and miscellaneous  
Polyesters, uses and miscellaneous  
Polysulfones, uses and miscellaneous  
Rubber, silicone, uses and miscellaneous  
RL: USES (Uses)  
(microspheres, additive blends, for gradually changing concentration  
composites)  
IT 9003-56-9, ABS polymer  
RL: USES (Uses)  
(powdered, microspheres, additive blends, for moldings with  
gradually changing additive concentration)

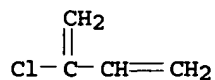
L121 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1986:628092 HCAPLUS  
DOCUMENT NUMBER: 105:228092  
TITLE: Control of the viscosity of  
adhesives for the manufacture of semi-finished  
fur products on a synthetic backing  
AUTHOR(S): Anpilogova, A. A.; Esina, G. F.; Baramboim, N.  
K.  
CORPORATE SOURCE: MTILP, USSR  
SOURCE: Kozhevenno-Obuvnaya Promyshlennost (1986),  
(9), 49-51  
CODEN: KOOPAJ; ISSN: 0023-4354  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB The viscosity ( $\eta$ ) of LMMA-M [ 31291-98-2]  
latex adhesive for bonding sheepskin fur to synthetic  
backings was studied as a function of shear rate **gradient**  
and pH. The  $\eta$  increased to a maximum of 57 mPa-s with  
increasing pH of the latex to 9-10 by addition of  
NH<sub>4</sub>OH. An addnl. increase in  $\eta$  to 311 mPa-s was  
attained by introduction of hydrolyzed polyacrylonitrile as a  
thickening agent. The joint strength of fur with split leather  
and fabrics was 21 and 18 N by bonding with LMMA-M adhesive.

IT 31291-98-2  
RL: USES (Uses)  
(latex, adhesive, for bonding fur to synthetic  
backing, viscosity of, effect of pH and thickening agent on)  
RN 31291-98-2 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with 2-chloro-1,3-butadiene  
and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

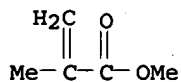
CM 1

CRN 126-99-8  
CMF C4 H5 Cl



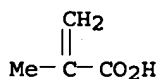
CM 2

CRN 80-62-6  
CMF C5 H8 O2



CM 3

CRN 79-41-4  
CMF C4 H6 O2



CC 38-3 (Plastics Fabrication and Uses)  
ST acrylic latex viscosity bonding fur; adhesive bonding fur  
IT Thickening agents  
(hydrolyzed polyacrylonitrile, for acrylic latex adhesives)  
IT Adhesives  
(latex-based, chloroprene-Me methacrylate-methacrylic acid copolymers, for bonding fur to synthetic backing, latex viscosity effect on)  
IT Fur  
(sheepskin, bonding of, with acrylic latex adhesives, viscosity effect on)  
IT 31291-98-2  
RL: USES (Uses)  
(latex, adhesive, for bonding fur to synthetic backing, viscosity of, effect of pH and thickening agent on)  
IT 25014-41-9D, hydrolyzed  
RL: USES (Uses)  
(thickening agents, for acrylic latex adhesives, viscosity in relation to)

L121 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1981:31387 HCAPLUS

DOCUMENT NUMBER: 94:31387

TITLE: Rapid density gradient  
centrifugation of dispersed particles

AUTHOR(S): Lange, H.

CORPORATE SOURCE: Zentralber. Forsch. Entwickl., Bayer A.-G.,  
Leverkusen, Fed. Rep. Ger.

SOURCE: Colloid and Polymer Science (1980), 258(9),



1077-85  
CODEN: CPMSB6; ISSN: 0303-402X

DOCUMENT TYPE: Journal  
LANGUAGE: German

AB The d. distribution (i.e., the distribution of the chemical composition of the particles) of dispersed particles, e.g., in polymer latexes, is determined in a few minutes by d.-gradient centrifugation in which a layer of a dispersion medium of low d. is added to a chemical similar medium of high d., e.g., H<sub>2</sub>O to D<sub>2</sub>O or 3-buten-2-ol [598-32-3] to HOCH<sub>2</sub>CH<sub>2</sub>OH [107-21-1], and the d. gradient is formed by diffusion. The method is especially useful for the determination of the chemical composition and heterogeneity of copolymer latexes and mixts. and the determination of particle crosslinking.

IT 9003-56-9

RL: USES (Uses)  
(latex, d.-gradient centrifugation of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

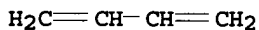
CMF C3 H3 N



CM 2

CRN 106-99-0

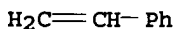
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-1 (Plastics Manufacture and Processing)

ST centrifugation density gradient particle; latex particle analysis centrifugation; solvent centrifugation gradient density; heterogeneity polymer latex centrifugation

IT Polymers, analysis

RL: ANST (Analytical study)  
(latexes, heterogeneity determination of, by d.-gradient centrifugation)

IT Centrifugation

(d.-gradient, polymer latex heterogeneity determination by)

IT 9003-17-2 9003-20-7 9003-53-6 9003-55-8 9003-56-9  
 24937-78-8  
 RL: USES (Uses)  
 (latex, d.-gradient centrifugation of)  
 IT 56-81-5, uses and miscellaneous 67-56-1, uses and miscellaneous  
 107-21-1, uses and miscellaneous 598-32-3  
 RL: USES (Uses)  
 (solvent mixts. containing, for d.-gradient  
 centrifugation)  
 IT 7789-20-0  
 RL: USES (Uses)  
 (water mixts., for d.-gradient centrifugation)

L121 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:153255 HCAPLUS  
 DOCUMENT NUMBER: 90:153255  
 TITLE: Ionically bonded filler-elastomer  
 composites  
 AUTHOR(S): Abbott, T. P.; James, C.; Otey, F. H.  
 CORPORATE SOURCE: NRRC, ARS, Peoria, IL, USA  
 SOURCE: Journal of Applied Polymer Science (1979),  
 23(4), 1223-31  
 CODEN: JAPNAB; ISSN: 0021-8995  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Carboxylic elastomers are insolubilized by interaction  
 with starch containing basic or salt-forming groups, and this  
 insolubilization is based on interactions that are primarily phys.  
 absorption, but ionic salt formation between filler and  
 elastomer probably occurs. Gel forms rapidly without  
 heating by merely mixing and freeze-drying the basic starch and  
 the carboxylic polymer; on mixing Cato 14 (OH form of a tertiary  
 amine hydrochloride-modified starch) and Hycar 1570X19  
 latex, the mixture thickened rapidly and, in some cases,  
 coagulated in very small particles. Severe shear mixing, such as  
 hot rubber roll mixing for 20-30 min, tends to phase  
 sep. the 2 components and decrease the gel  
 content. Extruded or compression-molded filled composites are  
 reprocessable.

IT 25265-19-4  
 RL: USES (Uses)  
 (rubber, fillers for, ionic-modified starch as)  
 RN 25265-19-4 HCAPLUS  
 CN 2-Propenoic acid, polymer with 1,3-butadiene and 2-propenenitrile  
 (9CI) (CA INDEX NAME)

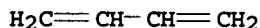
CM 1

CRN 107-13-1  
 CMF C3 H3 N

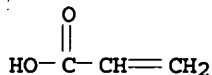
$\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{N}$

CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

 CRN 79-10-7  
 CMF C3 H4 O2


CC 38-9 (Elastomers, Including Natural Rubber)  
 ST starch modified carboxylated **rubber**; filler ionic starch **rubber**  
 IT **Rubber**, synthetic  
 RL: USES (Uses)  
 (acrylic acid-acrylonitrile-butadiene, fillers for, ionic-modified starch as)  
 IT **Rubber**, synthetic  
 RL: USES (Uses)  
 (butadiene-styrene-vinylbenzenesulfonic acid, fillers for, ionic-modified starch as)  
 IT 9005-25-8D, ionic derivs.  
 RL: USES (Uses)  
 (fillers, for carboxylated **rubbers**)  
 IT 25265-19-4 69908-03-8  
 RL: USES (Uses)  
 (**rubber**, fillers for, ionic-modified starch as)

L121 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1979:138773 HCAPLUS  
 DOCUMENT NUMBER: 90:138773  
 TITLE: Textile fabric with leatherlike appearance  
 INVENTOR(S): Hiers, John J.; Wald, Stephen A.  
 PATENT ASSIGNEE(S): Scott Chatham, Co., USA  
 SOURCE: U.S., 11 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE              |
|------------------------|------|----------|-----------------|-------------------|
| US 4132821             | A    | 19790102 | US 1977-835693  | 1977<br>0922      |
| PRIORITY APPLN. INFO.: |      |          | US 1977-835693  | A<br>1977<br>0922 |

AB Leather substitutes were prepared from a nonwoven needled fabric substrate by uniformly treating with a filler, differentially impregnating with a shape-sustaining immobilized polymeric composition such that >25% more polymer was between the face and center of the substrate than between the center and the back of the substrate, compacting to <75% original thickness, and adding a polymer skin

coat and optionally polished coats, colored toning coats, etc. Thus, a uniform web of loosely matted polyester fibers (1.5 denier and 1.5 in. crimp length, 18 oz/yd<sup>2</sup>) was carded onto a moving belt, needled to d. 6 lb/ft<sup>3</sup>, and impregnated with a filler based on alumina trihydrate and acrylic resins. The substrate with thickness 150-70 mils was treated with an acrylonitrile latex (Hycar latex 1571) by means of a heavy line gravure printer and dried to give a product with .apprx.100% more of the polymer between the face surface and the center than between the back surface and the center. The amount of filler in the substrate was .apprx.30 g/ft<sup>2</sup> and the amount of polymer was .apprx.15-20 g/ft<sup>2</sup>. The substrate was calendered at 225-325° F under 400 lb/linear in. pressure to give a product with thickness 60-70 mils which was given a skin coat and top polish coat.

IT 9010-81-5

RL: USES (Uses)

(rubber, binders, gradiently dispersed in polyester fiber-based leather substitutes)

RN 9010-81-5 HCAPLUS

CM 2-Propenoic acid, 2-methyl-, polymer with 1,3-butadiene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

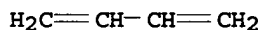
CMF C3 H3 N



CM 2

CRN 106-99-0

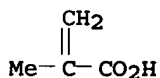
CMF C4 H6



CM 3

CRN 79-41-4

CMF C4 H6 O2



IC B32B005-16

INCL 428151000

CC 37-3 (Plastics Fabrication and Uses)

ST polyester fiber leather substitute; rubber binder leather substitute

IT Binding materials

(acrylonitrile-butadiene-methacrylic acid copolymer rubber, gradiently dispersed in polyester)

fiber-based leather substitutes)  
 IT Polyester fibers, uses and miscellaneous  
 RL: USES (Uses)  
 (leather substitutes based on, with **gradiently**  
 dispersed **rubber** binder)  
 IT Leather substitutes  
 (polyester fiber-based, with **gradiently** dispersed  
**rubber** binder)  
 IT Rubber, synthetic  
 RL: USES (Uses)  
 (acrylonitrile-butadiene-methacrylic acid, binders,  
**gradiently** dispersed in polyester fiber-based leather  
 substitutes)  
 IT 9010-81-5  
 RL: USES (Uses)  
 (**rubber**, binders, **gradiently** dispersed in  
 polyester fiber-based leather substitutes)

L121 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1976:495369 HCAPLUS  
 DOCUMENT NUMBER: 85:95369  
 TITLE: Thermal treatment of polar  
 dielectric parisons  
 PATENT ASSIGNEE(S): American Can Co., USA  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

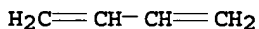
| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE              |
|------------------------|------|----------|-----------------|-------------------|
| JP 49129755            | A2   | 19741212 | JP 1973-137438  | 1973<br>1211      |
| US 3786221             | A    | 19740115 | US 1973-346172  | 1973<br>0329      |
| AU 7362017             | A1   | 19750501 | AU 1973-62017   | 1973<br>1031      |
| FR 2223157             | A1   | 19741025 | FR 1973-39680   | 1973<br>1108      |
| GB 1458824             | A    | 19761215 | GB 1973-57902   | 1973<br>1213      |
| DE 2404772             | A1   | 19741010 | DE 1974-2404772 | 1974<br>0201      |
| PRIORITY APPLN. INFO.: |      |          | US 1973-346172  | A<br>1973<br>0329 |

AB A bottle having uniform orientation release stress and useful as a container for beer or carbonated beverages was prepared by heating a parison of acrylonitrile-butadiene-methyl acrylate copolymer [27012-62-0] between 2 concentric circular electrodes with high-frequency energy to form a temperature gradient and blowing.

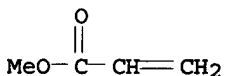
IT 27012-62-0  
RL: USES (Uses)  
(bottles, for beer and beverages)  
RN 27012-62-0 HCAPLUS  
CN 2-Propenoic acid, methyl ester, polymer with 1,3-butadiene and  
2-propenenitrile (9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 107-13-1  
CMF C3 H3 N



CM 2  
  
CRN 106-99-0  
CMF C4 H6



CM 3  
  
CRN 96-33-3  
CMF C4 H6 O2



CC 37-2 (Plastics Fabrication and Uses)  
IT Molding of plastics and rubbers  
(blow, of acrylonitrile-butyl acrylate-methyl acrylate  
copolymer, for bottles)  
IT 27012-62-0  
RL: USES (Uses)  
(bottles, for beer and beverages)

L121 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1974:553275 HCAPLUS

DOCUMENT NUMBER: 81:153275

TITLE: Effect of temperature on the  
coefficient of swelling of polymer melt  
ejected from a nozzle

AUTHOR(S): Evtimov, E.; Surbinova, Zh.

CORPORATE SOURCE: Bulg.

SOURCE: Polimeri (Sofia) (1972), 2, 15-30

CODEN: PSTNCL

DOCUMENT TYPE: Journal

LANGUAGE: Bulgarian

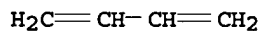
AB The coefficient of swelling of extruded polystyrene [9003-53-6],  
acrylonitrile-butadiene-styrene copolymer [9003-56-9],  
high- and low-d., polyethylene [9002-88-4], and polypropylene  
[9003-07-0] was determined at 170-220.deg.C by a capillary

viscometer and Brabender plastograph at various conventional gradients of shearing rate, .leq.425 g/cm2.sec.  
The effect of the nozzle diameter (2.1-5 mm) on the coefficient of swelling was also examined

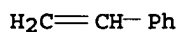
IT 9003-56-9  
RL: USES (Uses)  
(swelling coefficient of extruded, nozzle diameter effect on)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 107-13-1  
CMF C3 H3 N



CM 2  
  
CRN 106-99-0  
CMF C4 H6



CM 3  
  
CRN 100-42-5  
CMF C8 H8



CC 36-5 (Plastics Manufacture and Processing)  
IT Extrusion of plastics and rubbers  
(swelling in, nozzle diameter effect on)  
IT 9002-88-4 9003-07-0 9003-53-6 9003-56-9  
RL: USES (Uses)  
(swelling coefficient of extruded, nozzle diameter effect on)

L121 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1974:536924 HCAPLUS  
DOCUMENT NUMBER: 81:136924  
TITLE: Impact resistant thermoplastic resins  
PATENT ASSIGNEE(S): Toray Industries, Inc.  
SOURCE: Brit., 12 pp.  
CODEN: BRXXAA  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

| PATENT NO. | KIND | DATE  | APPLICATION NO. | DATE  |
|------------|------|-------|-----------------|-------|
| -----      | ---- | ----- | -----           | ----- |
| -----      |      |       |                 |       |

|                        |    |                |                |      |
|------------------------|----|----------------|----------------|------|
| GB 1356685             | A  | 19740612       | GB 1971-57171  | 1971 |
|                        |    |                |                | 1209 |
| JP 49026711            | B4 | 19740711       | JP 1970-108465 | 1970 |
|                        |    |                |                | 1209 |
| JP 49002335            | B4 | 19740119       | JP 1970-108957 | 1970 |
|                        |    |                |                | 1210 |
| PRIORITY APPLN. INFO.: |    | JP 1970-108465 | A              | 1970 |
|                        |    |                |                | 1209 |
|                        |    | JP 1970-108957 | A              | 1970 |
|                        |    |                |                | 1210 |

AB Butadiene graft copolymers with good phys. properties were continuously manufactured by prepolymerizing a butadiene polymer or graft copolymer, a vinyl monomer, and H<sub>2</sub>O, while evaporating and condensing some monomer and H<sub>2</sub>O, discarding some of the H<sub>2</sub>O and recycling the monomer and plug-flow advancing the mixture through a tower reactor with a temperature of 140.deg. at the inlet and 180-220.deg. at the outlet, while evaporating and condensing H<sub>2</sub>O and monomer as in the 1st reactor. Thus, a mixture containing polybutadiene 17.3, acrylonitrile-butadiene-styrene graft copolymer (I) [9003-56-9] 7.2, styrene 47.5, acrylonitrile 19.0, and H<sub>2</sub>O 9.0 weight % at 100.deg. was added to the 1st reactor at 110.deg. and 1.2 kg/cm<sup>2</sup> gage. With average retention time 4 hr, polymer content was 62%. The prepolymer was continuously fed to the 2nd reactor with uppermost wall section at 30.deg. to condense the monomer and H<sub>2</sub>O and with a temperature gradient from 140.deg. at the inlet to 220.deg. at the outlet. During polymerization the pressure was 4 kg/cm<sup>2</sup> gage. With average residence time 4 hr conversion was 98%. After 24 hr I was extruded and cut into yellow-white pellets tensile strength at yield 440 kg/cm<sup>2</sup> and good impact strength 26 kgcm/cm notch.

IT 9003-56-9P 26098-47-5P  
 RL: PREP (Preparation)  
 (graft, continuous manufacture of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N

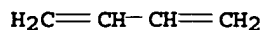


CM 2

CRN 106-99-0

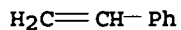
CMF C4 H6





CM 3

CRN 100-42-5  
CMF C8 H8



RN 26098-47-5 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
1,3-butadiene and 2-propenenitrile (9CI) (CA INDEX NAME)

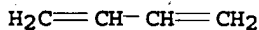
CM 1

CRN 107-13-1  
CMF C3 H3 N



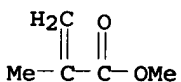
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 80-62-6  
CMF C5 H8 O2



IC C08F.  
CC 36-3 (Plastics Manufacture and Processing)  
ST butadiene graft copolymer; acrylonitrile butadiene styrene  
polymer; methyl methacrylate butadiene copolymer; rubber  
grafting  
IT Polymerization  
(graft, continuous, of vinyl compds. on butadiene  
rubber)  
IT 9003-56-9P 26098-47-5P  
RL: PREP (Preparation)  
(graft, continuous manufacture of)

L121 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1970:22243 HCAPLUS

DOCUMENT NUMBER: 72:22243  
 TITLE: Thermoplastic polymer material based on  
 crystalline poly(vinyl chloride)  
 INVENTOR(S): Scarso, Luciano; Cerri, Egidio; Pezzin,  
 Giovanni  
 PATENT ASSIGNEE(S): Montecatini Edison S.p.A.  
 SOURCE: Ger. Offen., 22 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| DE 1925741             |      | 19691127 | DE              |              |
| FR 2011501             |      |          | FR              |              |
| GB 1254041             |      |          | GB              |              |
| US 3772409             |      | 19730000 | US              |              |
| ZA 6903589             |      | 19690000 | ZA              |              |
| PRIORITY APPLN. INFO.: |      |          | IT              | 1968<br>0522 |

AB Thermoplastic polymer compns. based on highly crystalline poly-(vinyl chloride) (I) had high impact strength, workability, and heat distortion temperature. Thus, a composition contained crystalline I (of syndiotactic index 2.3) 80; an 11:29 CH<sub>2</sub>:CHCN (II)- $\alpha$ -methylstyrene (III) emulsion copolymer (IV) 10; a 17:54:29 II-butadiene-styrene (V) terpolymer 10; a heat stabilizer mixture (A) 2.9; a lubricant mixture of Ca stearate and petroleum 1; and a TiO<sub>2</sub>-CaCO<sub>3</sub> filler 5.3. A was a mixture of Ba-Cd stabilizer with Pb stearate and epoxyoctyl stearate. The ingredients were mixed for 15 min in a high-speed mixer at 100-10°, cooled with slower stirring for .apprx.15 min to 30-40. degree., and calendered on a roll mill at 185-200. degree. for 10 min to give specimens having Vicat temperature (ASTM-D-1525-58) 96°, Izod impact strength 5.3 kg-cm/cm at 23°, and melt viscosity 0.77 + 105 P (gradient  $\gamma$  = 100/sec), lower than that of I itself. Other preferred compns. contained a II-CH<sub>2</sub>:CMeCO<sub>2</sub>Me (VI) copolymer instead of IV or 2 of the following polymers with I: a 3:1 VI-V copolymer grafted on polybutadiene rubber and I grafted on an ethylene-propylene copolymer or on chlorinated polyethylene.

IT 25053-09-2, properties  
 RL: PRP (Properties)  
 (graft, vinyl chloride crystalline polymers containing, for improved mech. properties)

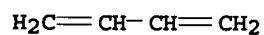
RN 25053-09-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

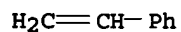
CM 1

CRN 106-99-0

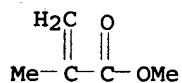
CMF C4 H6



CM 2

CRN 100-42-5  
CMF C8 H8

CM 3

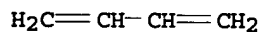
CRN 80-62-6  
CMF C5 H8 O2

IT 9003-56-9, properties  
RL: PRP (Properties)  
(vinyl chloride crystalline polymers **containing**, for improved  
mech. properties)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

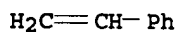
CM 1

CRN 107-13-1  
CMF C3 H3 N

CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

IC C08F  
 CC 36 (Plastics Manufacture and Processing)  
 IT 9002-88-4, properties  
 RL: PRP (Properties)  
 (chlorinated, vinyl chloride-grafted, vinyl chloride crystalline  
 polymers containing, for improved mech. properties)  
 IT 25053-09-2, properties 26007-02-3, properties  
 RL: PRP (Properties)  
 (graft, vinyl chloride crystalline polymers containing, for  
 improved mech. properties)  
 IT 25747-74-4  
 RL: USES (Uses)  
 (vinyl chloride crystalline polymers containing, for improved  
 mech. properties)  
 IT 9003-56-9, properties 25747-74-4, Acrylonitrile, polymer  
 with  $\alpha$ -methylstyrene, properties 30396-85-1, properties  
 RL: PRP (Properties)  
 (vinyl chloride crystalline polymers containing, for improved  
 mech. properties)

L121 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:436772 HCAPLUS

DOCUMENT NUMBER: 69:36772

TITLE: Molding anisotropy in ABS (acrylonitrile-  
 butadiene-styrene) polymers as revealed by  
 electron microscopy

AUTHOR(S): Kato, Koichi

CORPORATE SOURCE: Cent. Res. Lab., Toyo Rayon Co. Ltd., Otsu,  
 Japan

SOURCE: Polymer (1968), 9(5), 225-32

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The OsO<sub>4</sub> procedure for light and electron microscopy was used to  
 study the causes of delamination in thin-walled ABS injection  
 moldings. Although mol. orientation reached a maximum in the  
 delamination layer, the simple orientation of copolymer mols.  
 could not account for the observed delamination. Phase anisotropy  
 rather than mol. anisotropy accounted for the delamination of  
 injection moldings. Rubber particles were arranged in  
 rows, forming a laminar structure along the injection flow  
 direction. In order to produce such a structure, it was necessary  
 for the velocity gradient to exceed a certain limiting  
 value which varied with both polymer composition and molding  
 conditions. The rubber particles could be used as  
 indicators for molding flow patterns.

IT 9003-56-9, uses and miscellaneous

RL: USES (Uses)

(delamination of moldings of, phase anisotropy in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
 (9CI) (CA INDEX NAME)

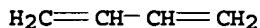
CM 1

CRN 107-13-1

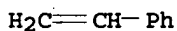
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CC 37 (Plastics Fabrication and Uses)  
IT 9003-56-9, uses and miscellaneous  
RL: USES (Uses)  
(delamination of moldings of, phase anisotropy in relation to)

L121 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:30467 HCAPLUS

DOCUMENT NUMBER: 68:30467

TITLE: Fracture processes in plastic-rubber blends. I. Temperature

dependencies of Charpy impact strengths

AUTHOR(S): Matsuo, Masato; Ueda, Akio; Kondo, Yoshio

CORPORATE SOURCE: Japan Geon Co., Kawasaki, Japan

SOURCE: Kobunshi Kagaku (1967), 24(264), 285-95

CODEN: KOKAAM; ISSN: 0023-2556

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB. Several acrylonitrile-butadiene-styrene (ABS) resins and poly(vinyl chloride) (PVC) resins blended with rubbers of different chemical structures by roll-milling were fabricated into test pieces and their Charpy impact strengths determined from -196 degree. to somewhat above room temperature. The glass transition temps. Tg of these blended polymers were also determined from measurement of dynamic losses. The impact strengths of the test pieces were low below the Tg of the component rubber but began to increase at Tg and linear relationships were obtained in the plots of temperature vs. log impact strength. When PVC was blended with nonpolar rubbers, i.e., the miscibility of resin and rubber was poor, the structure by microscopy was clearly inhomogeneous and the rate of increase of the impact strengths above Tg was relatively low, maximum rate of increase being obtained at a certain blending ratio of the resin and the rubber. In contrast, when PVC was blended with rubbers of high polarity, the Tg of the rubbers disappeared and shifts were observed in the Tg of PVC to lower temperature. The temperature dependencies of impact strengths were compared for 2 types of ABS resins, one of which was prepared by graft copolymer of acrylonitrile and styrene in polybutadiene latex and another of which by blending of acrylonitrile-styrene copolymer with polybutadiene latex. The temperature gradient of the impact strength

of the former was much larger than that of the latter. This fact is explained as evidence that the adhesive power between the rubber and the resin plays an important role in the fracture process of the blends. Fracture by impact should be understood as a kinetic process accompanied by the plastic deformation of the samples, as is suggested by the temperature dependencies of the impact strengths which are expressed by the following equation of the same form as the Arrhenius equation:  $I = A \exp(-B/T)$ , where I is the impact strength, A and B are consts., and T is the absolute temperature

IT 9003-56-9, properties  
 RL: PRP (Properties)  
 (graft, impact strength and dynamic losses of)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
 (9CI) (CA INDEX NAME)

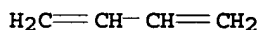
CM 1

CRN 107-13-1  
 CMF C3 H3 N



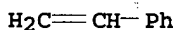
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8



RL: PRP (Properties)  
 (impact strength and dynamic losses of synthetic rubber and  
 CC 36 (Plastics Manufacture and Processing)  
 IT Rubber, ethylene-propene  
 (chlorinated, chloroethylene polymers containing, impact strength and dynamic losses of)  
 IT Rubber, butadiene-styrene, properties  
 Rubber, ethylene-propene  
 Rubber, nitrile, properties  
 (chloroethylene polymers containing, impact strength and dynamic losses of)  
 IT Rubber, synthetic  
 (impact strength and dynamic losses of synthetic rubber and)  
 IT Glass temperature

(of plastic-synthetic rubber mixts.)

IT 9003-56-9, properties  
 RL: PRP (Properties)  
 (graft, impact strength and dynamic losses of)

IT 9003-56-9, properties  
 RL: PRP (Properties)  
 (impact strength and dynamic losses of synthetic rubber and)

IT 9003-17-2, properties  
 RL: PRP (Properties)  
 (of cis-1,4-configuration, chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9002-86-2, properties  
 RL: PRP (Properties)  
 (rubber (synthetic) containing, impact strength and dynamic losses of)

IT 9003-55-8  
 (rubber, butadiene-styrene; chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9010-79-1  
 (rubber, ethylene-propene; chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9003-18-3  
 (rubber, nitrile; chloroethylene polymers containing, impact strength and dynamic losses of)

=> => d que stat l122

L4 STR

C=C

1 2

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L5 STR

C=C---C=C

1 2 3 4

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

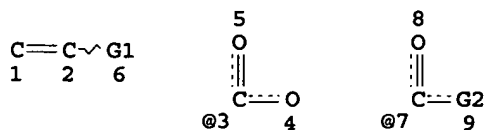
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L7 SCR 2043

L23 STR



VAR G1=3/7/CN

VAR G2=N/CN

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5

CONNECT IS E1 RC AT 8

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L24 SCR 2077

L26 8354 SEA FILE=REGISTRY SSS FUL L4 AND L5 AND L23 AND L7 AND

L24

L27 STR

C=C~Cb

1 2 3

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 3

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L29 5043 SEA FILE=REGISTRY SUB=L26 SSS FUL (L27 AND L5 AND L23)

L30 18545 SEA FILE=REGISTRY ABB=ON PLU=ON 107-13-1/CRN

L31 58027 SEA FILE=REGISTRY ABB=ON PLU=ON 79-10-7/CRN

L32 13864 SEA FILE=REGISTRY ABB=ON PLU=ON 79-06-1/CRN

L33 44757 SEA FILE=REGISTRY ABB=ON PLU=ON 79-41-4/CRN

L34 5511 SEA FILE=REGISTRY ABB=ON PLU=ON 97-65-4/CRN

L35 10015 SEA FILE=REGISTRY ABB=ON PLU=ON 106-99-0/CRN

L36 71546 SEA FILE=REGISTRY ABB=ON PLU=ON 100-42-5/CRN

L37 3042 SEA FILE=REGISTRY ABB=ON PLU=ON ((L30 OR L31 OR L32 OR L33 OR L34)) AND L35 AND L36

L41 464105 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX? OR RUBBER? OR ELASTOMER?

L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN

L44 2101 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 3/NC

L45 2247 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 4/NC

L46 724 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 3/NC

L47 1268 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 4/NC

L48 27 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 3/NC

L49 595 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 4/NC

L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN

L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50

L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43

L53 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON L44



L54 27642 SEA FILE=HCAPLUS ABB=ON PLU=ON L46  
 L55 24591 SEA FILE=HCAPLUS ABB=ON PLU=ON L48  
 L56 4674 SEA FILE=HCAPLUS ABB=ON PLU=ON L45  
 L57 3895 SEA FILE=HCAPLUS ABB=ON PLU=ON L47  
 L58 2954 SEA FILE=HCAPLUS ABB=ON PLU=ON L49  
 L59 33121 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55 OR  
 L56 OR L57 OR L58)  
 L68 98 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT? (2A) REGIM?  
 L70 227427 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT?  
 L72 17586 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPONENT? (3A) (INCREAS  
 ? OR DECREAS?)  
 L74 70532 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX?  
 L76 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55)  
 L77 3462 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L74  
 L79 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L70  
 L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L68  
 L81 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L70  
 L82 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND L41  
 L83 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L82 AND L74  
 L85 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L72  
 L86 4154 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND (INCR? OR  
 DECR? OR CONTINU?)  
 L87 1411 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND (TIME? OR  
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)  
 L88 1073 SEA FILE=HCAPLUS ABB=ON PLU=ON L87 AND (TEMP# OR  
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#  
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR  
 COOL? OR FREEZ? OR FROZ? OR CHILL?)  
 L89 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L70  
 L90 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (INCR? OR  
 DECR? OR CONT?)  
 L91 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TIME? OR  
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)  
 L92 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TEMP# OR  
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#  
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR  
 COOL? OR FREEZ? OR FROZ? OR CHILL?)  
 L97 61 SEA FILE=HCAPLUS ABB=ON PLU=ON (L79 OR L80 OR L81 OR  
 L82 OR L83) OR L85  
 L98 46 SEA FILE=HCAPLUS ABB=ON PLU=ON (L89 OR L90 OR L91 OR  
 L92)  
 L99 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L97 OR L98  
 L101 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 AND COAT?  
 L102 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 OR L101  
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52  
 L104 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 OR L102  
 L106 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND (WEIGHT? OR  
 WT? OR PERCENT? OR PER(W)CENT? OR PCT?)  
 L107 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND COMPONENT?  
 L108 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 OR L106 OR L107  
 L109 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 AND MOLAR?  
 L110 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 OR L109  
 L111 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L57 AND L70  
 L112 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111  
 L113 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111 OR L112  
 L115 7724 SEA FILE=HCAPLUS ABB=ON PLU=ON COATINGS/CT  
 L116 123267 SEA FILE=HCAPLUS ABB=ON PLU=ON "COATING PROCESS"/CT  
 L117 268501 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING MATERIALS/CT  
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 L120 60 SEA FILE=HCAPLUS ABB=ON PLU=ON L119 NOT L103

L121 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 AND L41  
L122 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 NOT L121

=> d l122 1-25 ibib abs hitstr hitind

L122 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 2005:160215 HCAPLUS  
DOCUMENT NUMBER: 142:248870  
TITLE: Heat-developable photographic  
material with uppermost layer  
containing binder not from animal  
protein  
INVENTOR(S): Suzuki, Keiichi; Tsukada, Yoshihisa  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 114 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| JP 2005049371          | A2   | 20050224 | JP 2003-202771  | 2003<br>0729 |
| PRIORITY APPLN. INFO.: |      |          |                 | 2003<br>0729 |

AB The material, with average gradient <10 in the characteristic curve (D-logE curve), comprises a support coated with an image forming layer containing photosensitive Ag halide, non-photosensitive organic Ag salt, a reducing agent, and a binder, and an nonphotosensitive layer, in which the uppermost layer comprises a binder containing  $\geq 50$  weight% which is not from animal protein and a crosslinking agent. The material gives images with good antiblocking property and storage stability under dark and hot environment.

IT 845265-16-9P, Acrylic acid-butadiene-Duranate WB 40-100-styrene copolymer 845265-17-0P, Acrylic acid-1,3-butadiene-Dicfine EM 60-styrene copolymer 845265-18-1P, Acrylic acid-1,3-butadiene-Duranate WB 40-80D-styrene copolymer 845265-19-2P, Acrylic acid-1,3-butadiene-Duranate WT 30-100-styrene copolymer 845265-20-5P, Acrylic acid-Burnock CR 60N-1,3-butadiene-styrene copolymer 845644-86-2P, Acrylic acid-1,3-butadiene-Duranate WT 20-100-styrene copolymer  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(heat-developable photog. material with uppermost layer containing binder not from animal protein)

RN 845265-16-9 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WB 40-100 and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

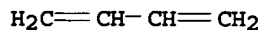
CRN 203743-05-9

CMF Unspecified  
CCI PMS, MAN

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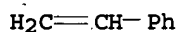
CM 2

CRN 106-99-0  
CMF C4 H6



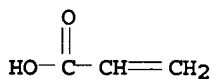
CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 79-10-7  
CMF C3 H4 O2



RN 845265-17-0 HCAPLUS

CN 2-Propenoic acid, polymer with 1,3-butadiene, Dicfine EM 60 and  
ethenylbenzene (9CI) (CA INDEX NAME)

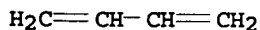
CM 1

CRN 165168-86-5  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

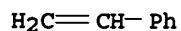
CM 2

CRN 106-99-0  
CMF C4 H6

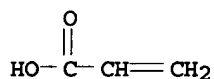


CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

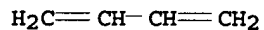
CRN 79-10-7  
CMF C3 H4 O2RN 845265-18-1 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WB 40-80D  
and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 203743-06-0  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

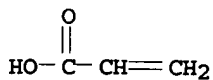
CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CM 4

CRN 79-10-7  
CMF C3 H4 O2RN 845265-19-2 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WT 30-100

and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 644967-27-1

CMF Unspecified

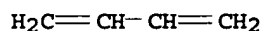
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 106-99-0

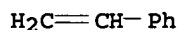
CMF C4 H6



CM 3

CRN 100-42-5

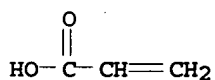
CMF C8 H8



CM 4

CRN 79-10-7

CMF C3 H4 O2



RN 845265-20-5 HCAPLUS

CN 2-Propenoic acid, polymer with Burnock CR 60N, 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 145379-20-0

CMF Unspecified

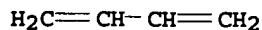
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

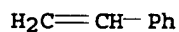
CM 2

CRN 106-99-0

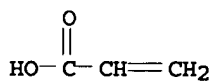
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8

CM 4

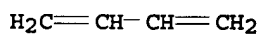
CRN 79-10-7  
CMF C3 H4 O2RN 845644-86-2 HCAPLUS  
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WT 20-100  
and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

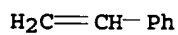
CRN 845644-44-2  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

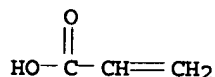
CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CM 4

CRN 79-10-7  
CMF C3 H4 O2



- IC ICM G03C001-498  
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST heat developable photog material uppermost layer  
 crosslinked polymer binder  
 IT Photographic films  
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)  
 IT Polyurethanes, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)  
 IT 243843-53-0 500572-61-2  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (development accelerator; heat-developable photog. material with uppermost layer containing binder not from animal protein)  
 IT 122463-72-3, Poval 205  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (gelled, protective layer; heat-developable photog. material with uppermost layer containing binder not from animal protein)  
 IT 9000-40-2, Locust bean gum 9005-38-3, Sodium alginate 9049-34-7, Low-methoxyl pectin 11114-20-8, κ-Carrageenan  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (gelling agent, protective layer containing; heat-developable photog. material with uppermost layer containing binder not from animal protein)  
 IT 845265-10-3P, Duranate WB 40-100-Poal KL 318 copolymer  
 845265-12-5P, Duranate WB 40-80D-Poal KL 318 copolymer  
 845265-13-6P, Duranate WT 30-100-Poal KL 318 copolymer  
 845265-14-7P, Dicfine EM 60-Poal KL 318 copolymer 845265-15-8P, Duranate WB 40-100-Jurymer AC 103-Poal 205 copolymer  
 845265-16-9P, Acrylic acid-butadiene-Duranate WB 40-100-styrene copolymer 845265-17-0P, Acrylic acid-1,3-butadiene-Dicfine EM 60-styrene copolymer  
 845265-18-1P, Acrylic acid-1,3-butadiene-Duranate WB 40-80D-styrene copolymer 845265-19-2P, Acrylic acid-1,3-butadiene-Duranate WT 30-100-styrene copolymer  
 845265-20-5P, Acrylic acid-Burnock CR 60N-1,3-butadiene-styrene copolymer 845265-21-6P, Acrylic acid-butyl acrylate-Duranate WB 40-100-methyl methacrylate copolymer  
 845274-06-8P, Carboxymethylcellulose sodium salt-Duranate WB 40-100 copolymer 845644-85-1P, Duranate WT 20-100-Poal KL 318 copolymer 845644-86-2P, Acrylic acid-1,3-butadiene-Duranate WT 20-100-styrene copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)

L122 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:757738 HCAPLUS  
 DOCUMENT NUMBER: 142:374356

TITLE: 1D and 2D electron spin resonance imaging  
(ESRI) of transport and degradation processes  
in polymers

AUTHOR(S): Motyakin, Mikhail V.; Schlick, Shulamith

CORPORATE SOURCE: Department of Chemistry, University of Detroit  
Mercy, Detroit, MI, 49219-0900, USA

SOURCE: Biological Magnetic Resonance (2004), 21(EPR:  
Instrumental Methods), 349-384  
CODEN: BMGRDB; ISSN: 0192-6020

PUBLISHER: Kluwer Academic/Plenum Publishers

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review describes the ESR spectra in the presence of magnetic  
field gradients, and presents the hardware necessary for  
ESR imaging (ESRI), and the data needed and collected in  
one-dimensional (1D) and 2D spectral-spatial ESRI. It discusses  
the application of ESRI for the elucidation of the degradation and  
stabilization of a copolymer, poly(acrylonitrile-co-butadiene-co-  
styrene).

IT 9003-56-9, Abs polymer  
RL: PRP (Properties)  
(model compound; ESR imaging of transport and degradation processes  
in polymers)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

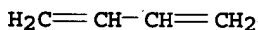
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-0 (Physical Properties of Synthetic High Polymers)

IT 9003-56-9, Abs polymer

RL: PRP (Properties)

(model compound; ESR imaging of transport and degradation processes  
in polymers)

REFERENCE COUNT: 87 THERE ARE 87 CITED REFERENCES AVAILABLE



FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:460071 HCAPLUS

DOCUMENT NUMBER: 139:308241

TITLE: Study on ABS alloy with permanent  
antistatativityAUTHOR(S): Chen, Er-fan; Zhao, Chang-li; Cheng, Yuan-jie;  
Zhou, BenlianCORPORATE SOURCE: Department of Polymer Materials and  
Engineering, Shenyang Institute of Chemical  
Technology, Shenyang, 110021, Peop. Rep. ChinaSOURCE: Gaofenzi Cailiao Kexue Yu Gongcheng (2003),  
19(3), 137-140

CODEN: GCKGEI; ISSN: 1000-7555

PUBLISHER: Gaofenzi Cailiao Kexue Yu Gongcheng Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB This paper deals with the mech. properties, antistatativity, and  
morphol. of the ABS alloys, which were prepared with amphiphilic  
copolymer, constituted of quaternary ammonium alkyl salt monomer  
of dimethylaminoethyl methacrylate and styrene. The results show  
that the mech. properties of ABS alloys are the same as those of  
ABS resin, but the alloys have significant permanent  
antistatativity; the ionic quaternary ammonium alkyl salt unit plays  
a role in the charge conduction; the critical volume fraction of charge  
conducting network is 0.05; micro-phase separation structure and concentration  
gradient of the copolymer are observed in the alloys by SEM,  
in which the network distribution is on the surface of the alloy  
and the bullet distribution is in the interior.

IT 9003-56-9, PA 757

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(HF 660; study on ABS alloy with permanent antistatativity)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

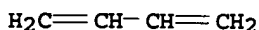
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=CH-Ph

CC 37-5 (Plastics Manufacture and Processing)  
IT 9003-56-9, PA 757  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(HF 660; study on ABS alloy with permanent antistatitivity)

L122 ANSWER 4 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STM

ACCESSION NUMBER: 2003:223634 HCAPLUS

DOCUMENT NUMBER: 138:388406

TITLE: Assessment of volatile organic compound emissions from ecosystems of China

AUTHOR(S): Klinger, L. F.; Li, Q.-J.; Guenther, A. B.; Greenberg, J. P.; Baker, B.; Bai, J.-H.

CORPORATE SOURCE: Atmospheric Chemistry Division, National Center for Atmospheric Research, Boulder, CO, USA

SOURCE: Journal of Geophysical Research, [Atmospheres] (2002), 107(D21), ACH16/1-ACH16/21  
CODEN: JGRDE3; ISSN: 0148-0227

PUBLISHER: American Geophysical Union

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Isoprene, monoterpene, and other volatile organic compound (VOC) emissions from grasslands, shrublands, forests, and peatlands in China were characterized to estimate their regional magnitudes and to compare these emissions with those from landscapes of North America, Europe, and Africa. Ecol. and VOC emission sampling was conducted at 52 sites centered in and around major research stations located in seven different regions of China: Inner Mongolia (temperate), Changbai Mountain (boreal-temperate), Beijing Mountain (temperate), Dinghu Mountain (subtropical), Ailao Mountain (subtropical), Kunming (subtropical), and Xishuangbanna (tropical). Transects were used to sample plant species and growth form composition, leafy (green) biomass, and leaf area in forests representing nearly all the major forest types of China. Leafy biomass was determined using generic algorithms based on tree diameter, canopy structure, and absolute cover. Measurements of VOC emissions were made on 386 of the 541 recorded species using a portable photo-ionization detector method. For 105 species, VOC emissions were also measured using a flow-through leaf cuvette sampling/gas chromatog. anal. method. Results indicate that isoprene and monoterpene emissions, as well as leafy biomass, vary systematically along gradients of ecol. succession in the same manner found in previous studies in the United States, Canada, and Africa. Applying these results to a regional VOC emissions model, we arrive at a value of 21 Tg C for total annual biogenic VOC emissions from China, compared to 5 Tg C of VOCs released annually from anthropogenic sources there. The isoprene and monoterpene emissions are nearly the same as those reported for Europe, which is comparable in size to China.

IT 9003-56-9, 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene

RL: GOC (Geological or astronomical occurrence); PRP (Properties); OCCU (Occurrence)

(emission of biogenic volatile organic compds. (isoprene, monoterpene) from ecosystems (grasslands, shrublands, forests) of China)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

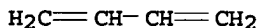
CM 1

CRN 107-13-1  
CMF C3 H3 N



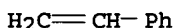
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



CC 53-10 (Mineralogical and Geological Chemistry)

Section cross-reference(s): 59

IT 78-79-5, 1,3-Butadiene, 2-methyl-, occurrence 9003-56-9,

2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene

RL: GOC (Geological or astronomical occurrence); PRP (Properties);  
OCCU (Occurrence)

(emission of biogenic volatile organic compds. (isoprene,  
monoterpene) from ecosystems (grasslands, shrublands, forests)  
of China)

REFERENCE COUNT: 71 THERE ARE 71 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 5 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:893193 HCAPLUS

DOCUMENT NUMBER: 138:221948

TITLE: Electron spin resonance imaging of polymer  
degradation and stabilization

AUTHOR(S): Lucarini, Marco; Pedulli, Gian Franco;  
Motyakin, Mikhail V.; Schlick, Shulamith

CORPORATE SOURCE: Department of Organic Chemistry, University of  
Bologna, Bologna, 40127, Italy

SOURCE: Progress in Polymer Science (2002), Volume  
Date 2003, 28(2), 331-340  
CODEN: PRPSB8; ISSN: 0079-6700

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The application of one-dimensional (1D) and two-dimensional (2D)  
ESR imaging (ESRI) is presented for the study of photo- and

thermal degradation of polymers containing hindered amine stabilizers (HAS). The method is based on the formation of stable nitroxide radicals derived from HAS during polymer treatment, and on encoding spatial information in the ESR spectra via magnetic field gradients. The imaging technique allowed nondestructive profiling of the HAS-derived nitroxide radicals. The intensity profile in the sample depth was deduced by 1D ESRI, and the spatial variation of the ESR line shapes ('spectral profiling') was determined by 2D spectral-spatial ESRI. Application of this approach to the photodegrdn. of polypropylene and to the photo- and thermal degradation of poly(acrylonitrile-butadiene-styrene) will be described. The method can be used to detect spatial heterogeneities in the degradation process and to identify morphol. domains that are selectively degraded.

IT 106677-58-1, ABS graft copolymer  
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
 (photo and thermal degradation and stabilization of  
 polymers containing hindered amine stabilizers)  
 RN 106677-58-1 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene,  
 graft (9CI) (CA INDEX NAME)

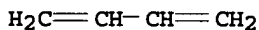
CM 1

CRN 107-13-1  
 CMF C3 H3 N



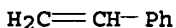
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8



CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 37  
 ST polypropylene ABS photo thermal degrdn hindered amine  
 stabilizer  
 IT Testing of materials  
 (nondestructive; photo and thermal degradation and  
 stabilization of polymers containing hindered amine  
 stabilizers)  
 IT Stabilizing agents  
 (photo and thermal degradation and stabilization of

polymers containing hindered amine stabilizers)

IT Polymer degradation  
(photochem.; photo and thermal degradation and  
stabilization of polymers containing hindered amine  
stabilizers)

IT Polymer degradation  
(thermooxidative; photo and thermal degradation and  
stabilization of polymers containing hindered amine  
stabilizers)

IT 9003-07-0, Polypropylene 106677-58-1, ABS graft  
copolymer  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(photo and thermal degradation and stabilization of  
polymers containing hindered amine stabilizers)

IT 25973-55-1, Tinuvin 328 52829-07-9, Tinuvin 770  
RL: MOA (Modifier or additive use); USES (Uses)  
(stabilizer; photo and thermal degradation and  
stabilization of polymers containing hindered amine  
stabilizers)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 6 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:808372 HCAPLUS

DOCUMENT NUMBER: 137:306986

TITLE: Optical detection of transmembrane potential  
changes

INVENTOR(S): Farinas, Javier A.

PATENT ASSIGNEE(S): Caliper Technologies Corp., USA

SOURCE: U.S., 17 pp.  
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE                              |
|------------------------|------|----------|-----------------|-----------------------------------|
| US 6468763             | B1   | 20021022 | US 2000-661337  | 2000<br>0914                      |
| PRIORITY APPLN. INFO.: |      |          |                 | US 1999-156639P P<br>1999<br>0929 |

AB Compsns. for monitoring transmembrane potential across cellular  
membranes. The compsns. typically comprise a cell having a plasma  
membrane that comprises a first leaflet and a second  
leaflet, the membrane comprising first and second  
membrane associated components which, when placed adjacent  
each other either produce or quench a fluorescent signal, wherein.  
The first membrane associated component translocates from a  
first leaflet of the membrane to a second leaflet of the  
membrane in response to an elec. potential gradient  
across the membrane, the first membrane associated component  
being selected from a non-fluorescent cationic fluorescence  
quencher a non-fluorescent anionic fluorescence quencher and a  
cationic fluorophore.

IT 9003-56-9, (Acrylonitrile-butadiene-styrene copolymer)  
RL: DEV (Device component use); USES (Uses)

(optical detection of transmembrane potential changes)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

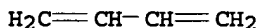
CMF C3 H3 N



CM 2

CRN 106-99-0

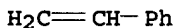
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM C12Q001-02

ICS C12Q001-00; C12N013-00; G01N033-53

INCL 435029000

CC 9-5 (Biochemical Methods)

IT 61-73-4, Methylene blue 548-62-9, Crystal violet 569-64-2D,  
Malachite green, derivs. 2564-83-2, Tempo

3229-53-6D, Proxyl, conjugate with triphenylphosphonium derivs.

6268-49-1D, Dabcyl, conjugate with triphenylphosphonium derivs.

6399-81-1D, Triphenylphosphonium bromide, conjugate with BODIPY

13558-31-1D, octadecyl derivs. 23065-05-6D, Styryl, derivs.

25554-61-4D, Doxyl, conjugate with triphenylphosphonium derivs.

65603-19-2, Octadecyl rhodamine B 114199-16-5, CAT 16

138026-71-8D, BODIPY, conjugate with triphenylphosphonium derivs.

174896-83-4D, dabcyl, doxyl and proxyl labeled 255386-93-7

470702-49-9

RL: BUU (Biological use, unclassified); BIOL (Biological study);  
USES (Uses)

(optical detection of transmembrane potential changes)

IT 7440-21-3, Silicon, uses 9002-84-0, Polytetrafluoroethylene

9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene

9003-07-0, Polypropylene 9003-53-6, Polystyrene

9003-56-9, (Acrylonitrile-butadiene-styrene copolymer)

9011-14-7, Polymethylmethacrylate 9016-00-6,

Polydimethylsiloxane 9016-80-2, Polymethylpentene 14808-60-7,

Quartz, uses 24937-79-9, Polyvinylidene fluoride 31900-57-9,

Polydimethylsiloxane

RL: DEV (Device component use); USES (Uses)

(optical detection of transmembrane potential changes)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:287619 HCAPLUS

DOCUMENT NUMBER: 137:79521

TITLE: Preparation and degradation of highly  
conducting polyaniline doped with picric acid

AUTHOR(S): Ahmed, Seddique M.

CORPORATE SOURCE: Department of Chemistry, Faculty of Science,  
Assiut University, Assiut, 71516, Egypt

SOURCE: European Polymer Journal (2002), 38(6),  
1151-1158

CODEN: EUPJAG; ISSN: 0014-3057

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Preparation and characterization of highly conducting polyaniline (PANI) doped with picric acid (PA) was proved with the help of various techniques. Elemental anal. and FTIR and XPS spectroscopic measurements confirm that the PA operates as a protonating agent to induce the internal conversion of PANI emeraldine base to the emeraldine salt at doping level 50%. Mol. modeling calcns. showed an optimum geometric structure for 2PA:1PANI (energy 38.231388 kcal/mol, and gradient 0.065246). The observed higher conductivity ( $\sigma$  .apprx.150 S/cm) of PA-doped PANI film prepared at molar ratio 2PA:1PANI is attributed to a change in the mol. conformation from coil to expanded coil-like. PA-doped PANI is thermally unstable above .apprx.135°C and the thermal processing with an insulating matrix is not profitable but solution casting is highly promising. PA-doped PANI with acrylonitrile-butadiene-styrene copolymer has been fabricated and showed the threshold value .apprx.4 weight% of a conducting material. The reduced PA-doped PANI reveals an ability to store elec. energy of about 110.43 Wh/kg in a condensed lightwt. form. The immediate decoloration of the dark green ( $\lambda_{max}$  .apprx. 815 nm) PANI after addition of 5.5 µg/mL KMnO<sub>4</sub> in strong acid medium (pH 1.0, H<sub>2</sub>SO<sub>4</sub>, 40% DMF) is due to the highest oxidized form of PANI. Increasing the absorbance with increases in the KMnO<sub>4</sub> concentration (µg/mL) at .apprx.385 nm has been successfully applied to the determination of trace amount (0.55 µg/mL) of Mn(VII) in a synthetic solution

IT 9003-56-9, ABS polymer

RL: PRP (Properties)

(blends with picric acid-doped polyaniline; preparation and properties of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

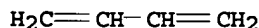
CM 1

CRN 107-13-1

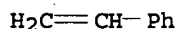
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 52, 72, 79IT Polymer degradation  
(thermal; preparation and degradation of highly conducting  
polyaniline doped with picric acid)IT 9003-56-9, ABS polymer  
RL: PRP (Properties)  
(blends with picric acid-doped polyaniline; preparation and  
properties of)REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 8 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:140986 HCAPLUS

DOCUMENT NUMBER: 132:265974

TITLE: Water permeability of polymers at high  
concentration **gradient** and  
concentration polarizationAUTHOR(S): Grigor'yants, I. K.; Trikhanova, G. A.  
CORPORATE SOURCE: Mosk. Gos. Industrial'nyi Univ., Moscow,  
RussiaSOURCE: Plasticheskie Massy (1999), (12), 29-40  
CODEN: PLMSAI; ISSN: 0554-2901

PUBLISHER: ZAO NP "Plasticheskie Massy"

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Russian

AB A review with 48 refs. on water permeability of polymeric  
membranes discussing the effects of chain structure on  
permeability of polyamides, effect of gamma radiation on  
permeability of block polyether-polyurethanes and  
polycarbonate-polysiloxanes, the effect of radiation sterilization  
on permeability of membranes, the effect of the osmotic agent,  
water transport conditions, and membrane design on permeability.IT 9003-56-9, ABS plastic  
RL: PRP (Properties)  
(water permeability of polymers at high concentration **gradient**  
and concentration polarization)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

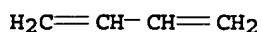


CRN 107-13-1  
CMF C3 H3 N



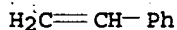
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



- CC 38-0 (Plastics Fabrication and Uses)
- ST water permeability polymer **gradient** polarization review;  
membrane polymer permeability gamma radiation review;  
sterilization gamma radiation membrane permeability review
- IT Polysiloxanes, properties  
RL: PRP (Properties)  
(di-Me, polycarbonate-, water permeability of polymers at high  
concentration **gradient** and concentration polarization)
- IT Polysiloxanes, properties  
Polysiloxanes, properties  
RL: PRP (Properties)  
(polycarbonate-, block; water permeability of polymers at high  
concentration **gradient** and concentration polarization)
- IT Polyurethanes, properties  
RL: PRP (Properties)  
(polyether-, block; water permeability of polymers at high  
concentration **gradient** and concentration polarization)
- IT Polycarbonates, properties  
Polycarbonates, properties  
RL: PRP (Properties)  
(polysiloxane-, block; water permeability of polymers at high  
concentration **gradient** and concentration polarization)
- IT Sterilization and Disinfection  
(radiation-induced; water permeability of polymers at high  
concentration **gradient** and concentration polarization)
- IT Crystallinity  
Diffusion  
Gamma ray  
Membranes, nonbiological  
Permeability  
Solubility  
Sorption  
(water permeability of polymers at high concentration **gradient**  
and concentration polarization)

IT Polyamides, properties  
RL: PRP (Properties)  
(water permeability of polymers at high concentration **gradient**  
and concentration polarization)  
IT 7732-18-5, Water, miscellaneous  
RL: MSC (Miscellaneous)  
(water permeability of polymers at high concentration **gradient**  
and concentration polarization)  
IT 9003-01-4, PA 12 9003-56-9, ABS plastic 9011-14-7,  
PMMA 24937-16-4, PA 12 24937-78-8, Ethylene-vinyl acetate  
copolymer 25038-54-4, PA 6, properties 32131-17-2, PA 66,  
properties 50586-48-6, PA 548 76901-49-0, PA 4 85746-30-1,  
Laprol  
RL: PRP (Properties)  
(water permeability of polymers at high concentration **gradient**  
and concentration polarization)

L122 ANSWER 9 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:10082 HCAPLUS

DOCUMENT NUMBER: 130:52908

TITLE: Polycarbonate/acrylonitrile-butadiene-styrene  
blends. Miscibility and interfacial adhesion  
AUTHOR(S): Santana, O. O.; MasPOCH, M. L.; Martinez, A.  
B.

CORPORATE SOURCE: Centre Catala Plastic, Terrassa, E-08222,  
Spain

SOURCE: Polymer Bulletin (Berlin) (1998), 41(6),  
721-728

CODEN: POBUDR; ISSN: 0170-0839

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB By DSC measurements it was determined that blends of polycarbonate (PC)  
and a ABS core-shell terpolymer with 24% of acrylonitrile and 6%  
of butadiene seems to show limited miscibility due to the  
partitioning of the oligomers contained on each raw  
material. Like in other PC blends systems, the composition of the  
conjugated interphase is not constant but depends on the ratio of  
components in the blend. In all the compns. studied the  
apparent solubility of ABS (actually the SAN phase) in the PC-rich  
phase increase with decreasing volume fraction  
of PC in blends reaching a maximum at 10% of ABS. Yield Stress of  
the blends follows the rule of mixture almost until 10% of ABS,  
indicating that interfacial adhesion is strong enough to ensure  
stress transfer between phases in the course of yielding and  
drawing. Applying the Puckanszky et al. model, it was observed that  
>15% of ABS, the effectiveness in stress transfer depends on the  
morphol. **gradient** generated during the mixing and  
specimens' molding.

IT 9003-56-9, ABS polymer  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(blends; miscibility and interfacial adhesion in  
polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

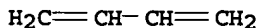
CM 1

CRN 107-13-1

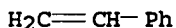
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6

CM 3

CRN 100-42-5  
CMF C8 H8

CC 36-5 (Physical Properties of Synthetic High Polymers)

IT Glass transition temperature

Miscibility

Polymer morphology

(miscibility and interfacial adhesion in

polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

IT 9003-56-9, ABS polymer 24936-68-3, Bisphenol A-carbonic  
acid copolymer, SRU, properties 25037-45-0, Bisphenol A-carbonic  
acid copolymer

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(blends; miscibility and interfacial adhesion in

polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L122 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:739344 HCAPLUS

DOCUMENT NUMBER: 130:38930

TITLE: Analysis of polymeric materials with  
gradient and composite structures

INVENTOR(S): Sumitani, Keiji; Sugitani, Hatsuo

PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE                   |
|------------------------|------|----------|-----------------|------------------------|
| JP 10300649            | A2   | 19981113 | JP 1997-110578  | 1997<br>0428           |
| PRIORITY APPLN. INFO.: |      |          |                 | JP 1997-110578<br>1997 |

0428

AB The anal. includes taking the test material along a certain direction, cutting along the direction at a certain angle to prepare a plural number of specimens, and conducting the required tests. The aluminum salts of an ABS **gradient** material were analyzed by atomic absorption spectrometry.

IT 9003-56-9, ABS polymer  
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)  
(anal. of polymeric materials with **gradient** and composite structures)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

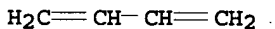
CMF C3 H3 N



CM 2

CRN 106-99-0

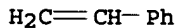
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM G01N001-28  
ICS G01N021-01

CC 36-4 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 80

ST analysis polymer **gradient** composite structure; aluminum salt ABS **gradient** material analysis; AAS ABS **gradient** material analysis

IT Atomic absorption spectrometry  
(anal. of polymeric materials with **gradient** and composite structures)

IT Polymers, processes  
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)  
(anal. of polymeric materials with **gradient** and composite structures)

IT 9003-56-9, ABS polymer  
RL: ANT (Analyte); PEP (Physical, engineering or chemical

process); ANST (Analytical study); PROC (Process)  
(anal. of polymeric materials with gradient and  
composite structures)

L122 ANSWER 11 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:282743 HCAPLUS

DOCUMENT NUMBER: 129:5302

TITLE: IR temperature sensors for plastics  
processing. Measuring principle, advantages,  
and application

AUTHOR(S): Obendrauf, Walter; Langecker, Guenter R.  
CORPORATE SOURCE: Inst. Kunststoffverarbeitung, Montanuniv.  
Leoben, Leoben, A-8700, Austria

SOURCE: Oesterreichische Kunststoff-Zeitschrift  
(1998), 29(3/4), 54-58  
CODEN: OKZSAV; ISSN: 0029-926X

PUBLISHER: Verlag Lorenz

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The influence of the penetration depth of IR temperature  
sensors and the effect of the absorptivity of plastics on  
time-resolved temperature measurements in plastics  
processing was investigated. The penetration depth of the sensor  
and the absorptivity of the plastics are relevant for the determination of  
temperature gradients in the melt. A layer model was  
used to allow quant. results on the temperature display of the  
sensor. Depending on the plastics, the penetration depth varies  
between 8 mm (PVC) and some  $\mu\text{m}$  (PP) and has a significant  
influence on the temperature measurement. If the sensors are  
integrated in hot tool or nozzle surfaces, the IR radiation of the  
sensor itself must also be taken into account.

IT 9003-56-9, ABS

RL: PRP (Properties)

(Novodur P 2T; IR absorptivity and penetration depth in study  
of IR temperature sensors)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

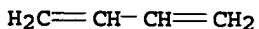
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

- CC 38-2 (Plastics Fabrication and Uses)
- ST IR temp sensor plastics absorptivity; penetration depth  
IR temp sensor plastics
- IT Plastics, properties  
RL: PRP (Properties)  
(IR absorptivity and penetration depth in study of IR temperature sensors)
- IT Temperature sensors  
(IR temperature sensors for plastics processing)
- IT Absorptivity  
(IR; IR absorptivity and penetration depth of plastics in study of IR temperature sensors)
- IT 9002-88-4, Polyethylene  
RL: PRP (Properties)  
(Daplen CE 4664; IR absorptivity and penetration depth in study of IR temperature sensors)
- IT 24937-16-4, PA 12  
RL: PRP (Properties)  
(Grilamid L 20GM; IR absorptivity and penetration depth in study of IR temperature sensors)
- IT 9002-86-2, PVC 9003-07-0, Polypropylene 9003-54-7, Luran 368R 25085-53-4, KS 10 79331-75-2, Grilamid TR 55  
RL: PRP (Properties)  
(IR absorptivity and penetration depth in study of IR temperature sensors)
- IT 9003-56-9, ABS  
RL: PRP (Properties)  
(Novodur P 2T; IR absorptivity and penetration depth in study of IR temperature sensors)
- IT 9011-14-7, PMMA  
RL: PRP (Properties)  
(PMMA 8N; IR absorptivity and penetration depth in study of IR temperature sensors)
- IT 9003-53-6, Polystyrene  
RL: PRP (Properties)  
(PS 168N; IR absorptivity and penetration depth in study of IR temperature sensors)

L122 ANSWER 12 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:103618 HCAPLUS

DOCUMENT NUMBER: 126:161489

TITLE: Characterization of immobilized cells in biodegradation of ABS resin manufacturing wastewater

AUTHOR(S): Chen, Wen-Chin; Cheng, Sheng-Shung

CORPORATE SOURCE: Department of Environmental Engineering, Chenk Kung University, Tainan, Taiwan

SOURCE: Water Science and Technology (1996), 34(10, Water Quality International '96, Part 6), 51-58

CODEN: WSTED4; ISSN: 0273-1223

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Because of the presence of refractory and biol. inhibitory organic compds. in ABS resin wastewater, which would retard the

bioactivity of the autotrophic nitrifier and make the efficiency of nitrification process unstable, the application of cell immobilization for ABS wastewater treatment has been investigated by immobilizing the enrichment culture of nitrifying bacteria with alginate. The characterization of the immobilized cells in various alginate concns. was conducted by a series of biodegradability studies with electrolytic respirometry and compared with the differences from the dispersed cells. Results clearly indicated that immobilized cells achieved higher efficiency of COD and TKN removal than the dispersed cells during the period of high initial concentration of wastewater. Meanwhile, high concentration of cells were growing near the gel surface and reduced the effects of diffusional restriction. No remarkable difference was found while the concentration of alginate ranged from 3% to 5%. According to mass balance of total nitrogen, more than 25% of total nitrogen was removed in the batch system of the immobilized cell. Simultaneous nitrification and denitrification could occur due to the oxygen gradient throughout the gel matrix. Compared with the complete mixing system of the dispersed cell, the approach for the immobilized-cell system provided a more effective method for treating the special wastewater with high strength of nitrogenous and inhibitory compds.

IT 9003-56-9, ABS

RL: MSC (Miscellaneous)

(characterization of immobilized cells in biodegrdn. of ABS resin manufacturing wastewater)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

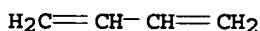
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CM 2

CRN 106-99-0

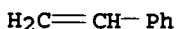
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 60-1 (Waste Treatment and Disposal)

Section cross-reference(s): 37

IT 9003-56-9, ABS

RL: MSC (Miscellaneous)  
(characterization of immobilized cells in biodegrdn. of ABS  
resin manufacturing wastewater)

L122 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:27124 HCAPLUS

DOCUMENT NUMBER: 126:75840

TITLE: Manufacturing a molding using a filler or an  
additive concentrated on an arbitrary portion  
or distributed at a **gradient**  
concentration

INVENTOR(S): Kato, Tsuguo; Thai, Cao M.

PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan

SOURCE: U.S., 9 pp., Cont. of U. S. Ser. No. 198,262,  
abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE            |
|------------|------|----------|-----------------|-----------------|
| US 5589129 | A    | 19961231 | US 1995-491687  | 1995<br>0619    |
|            |      |          | JP 1993-30161   | A 1993<br>0219  |
|            |      |          | US 1994-198262  | B1 1994<br>0218 |

AB A d.c. voltage is applied to a liquid resin composition to concentrate the  
title filler/additive ionic material and/or chargeable material on  
a desired portion or to distribute the ionic material and/or  
chargeable material **continuously**, prior to curing or  
solidifying the resin. SiO<sub>2</sub>-filled Epon 828-  
methylnetetrahydrophthalic anhydride copolymer composition was subjected  
to d.c. current 100V for 5 min, and cured at 120.  
**degree**. for 2 h and 150° for 10 h to give  
a molding having Barcol surface hardness 71 and crack resistance (  
**thermal** cycle test 0-100°; 1 h cycle) 8  
cycles, vs. 71 and 1, resp., for epoxy composition without current  
applied.

IT 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); POF (Polymer  
in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an  
arbitrary portion or distributed at a **gradient**  
concentration)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N

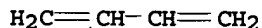




CM 2

CRN 106-99-0

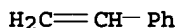
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM B29C035-08

INCL 264437000

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

ST voltage application epoxy molding manuf; filler migration voltage application filled epoxy; additive migration voltage application filled polymer; continuous distribution filler voltage application polymer

IT Electric current

(application of d.c. current; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Polyimides, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(maleimide-based; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Electronic packaging process

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Clays, uses

Glass, uses

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Acrylic polymers, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Epoxy resins, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Phenolic resins, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polyamides, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polyesters, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polythiophenylenes

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Semiconductor materials

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration for encapsulating)

IT 76397-91-6, Bisphenol A-epichlorohydrin-methyltetrahydrophthalic anhydride copolymer

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)

(filled; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 1344-28-1, Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), uses 7631-86-9, Silica, uses

12033-89-5, Silicon nitride, uses 13463-67-7, Titanium oxide,

uses 14807-96-6, Talc, uses 21645-51-2, Aluminum hydroxide,

uses 24304-00-5, Aluminum nitride 123513-16-6, Denon 314C

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6,

Polystyrene 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 126123-47-5

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

ACCESSION NUMBER: 1995:690410 HCAPLUS  
DOCUMENT NUMBER: 123:142007  
TITLE: Determination and survey of starting materials  
and subsidiary colors in new coccine by high  
performance liquid chromatography  
AUTHOR(S): Yamada, Makiko; Kato, Yoshiaki; Nakamura,  
Mikio; Ishimitsu, Susumu; Shibata, Tadashi;  
Ito, Yoshio  
CORPORATE SOURCE: San-Ei Gen F. F. I., Inc., Toyonaka, 561,  
Japan  
SOURCE: Shokuhin Eiseigaku Zasshi (1995), 36(3),  
417-22  
CODEN: SKEZAP; ISSN: 0015-6426  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

AB A method for determination of the starting materials, [7-hydroxy-1,3,6-naphthalenesulfonic acid (TS); G-salt (GS), R-salt (RS), Schaeffer's salt (SS) and naphthionic acid (NA)] and subsidiary colors, [ponceau 6R (P6R), amaranth (R-2) and fast red E (FRE)] in new coccine (R-102) was developed by use of HPLC. The following conditions were used for anal.: column, L-column ODS (4.6 mm i.d. + 250 mm); eluent, gradient elution system of 0.02 M ammonium acetate and acetonitrile (hold at 0.02 M ammonium acetate for 5 min, then 0-30% acetonitrile in 45 min); detection for TS, GS, RS, SS, and NA at 238 nm and subsidiary colors at 510 nm. Recoveries of each impurity from R-102 averaged 99.1-103.5%. Ten samples of com. R-102 were analyzed by the present HPLC method and the impurities were as follows: 0.005-0.044%; GS, 0.044-0.284%; NA, 0.013-0.196%; RS, N.D.; SS, N.D.; P6R, 0.008-0.169%; R-2, N.D. approx. 0.279%; FRE, 0.007-0.100%. The detection limit was 0.001% for each impurity.  
IT 9003-56-9, R-102  
RL: AMX (Analytical matrix); ANST (Analytical study)  
(determination and survey of starting materials and subsidiary colors in R-102 by HPLC)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

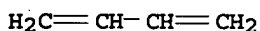
CM 1

CRN 107-13-1  
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 17-1 (Food and Feed Chemistry)

IT 9003-56-9, R-102

RL: AMX (Analytical matrix); ANST (Analytical study)  
(determination and survey of starting materials and subsidiary colors  
in R-102 by HPLC)

L122 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:611511 HCAPLUS

DOCUMENT NUMBER: 123:200268

TITLE: Fracture criterion of materials subjected to  
temperature gradient

AUTHOR(S): Shah, Q. H.; Homma, H.

CORPORATE SOURCE: Department Energy Engineering, Toyohashi  
University Technology, Toyohashi, JapanSOURCE: International Journal of Pressure Vessels and  
Piping (1995), 62(1), 59-68  
CODEN: PRVPAS; ISSN: 0308-0161

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fracture tests on fatigue-pre-cracked three-point bend specimens  
of PMMA, polycarbonate (PC), and ABS were conducted to establish  
the effects of a temperature gradient on the  
crack-initiation fracture toughness in temperature ranges  
where the fracture toughness of the above-mentioned materials  
changes steeply. The tests were made on specimens subjected to  
various temperature gradients while the crack-tip  
temperature of the specimen was kept constant. Results obtained  
from the three materials were compared to establish a fracture  
criterion of the materials subjected to a temperature  
gradient. The results showed that the fracture toughness  
of all three materials is influenced in a similar fashion and is  
dependent upon the degree of the temperature  
gradient along the crack line.

IT 9003-56-9, ABS

RL: PRP (Properties)

(fracture criterion of polymers subjected to temperature  
gradient)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

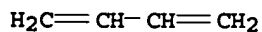
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CRN 106-99-0

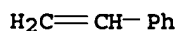
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)  
ST polymer fracture three point bend; **temp gradient**  
crack plastic; PMMA fracture three point bend; ABS fracture three  
point bend; polycarbonate fracture three point bend  
IT Crack  
Fracture  
Polymer morphology  
Strain  
Stress, mechanical  
Testing of materials  
(fracture criterion of polymers subjected to **temperature**  
**gradient**)  
IT Plastics  
Polycarbonates, properties  
Polymers, properties  
RL: PRP (Properties)  
(fracture criterion of polymers subjected to **temperature**  
**gradient**)  
IT 9003-56-9, ABS 9011-14-7, PMMA 24936-68-3, Bisphenol  
A-carbonic acid copolymer, sru, properties 25037-45-0, Bisphenol  
A-carbonic acid copolymer  
RL: PRP (Properties)  
(fracture criterion of polymers subjected to **temperature**  
**gradient**)

L122 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1994:701919 HCAPLUS  
DOCUMENT NUMBER: 121:301919  
TITLE: On the pressure dependency of the viscosity of  
molten polymers  
AUTHOR(S): Kadijk, S. E.; Van den Brule, B. H. A. A.  
CORPORATE SOURCE: Philips Research Laboratories, Eindhoven,  
5600JA, Neth.  
SOURCE: Polymer Engineering and Science (1994),  
34(20), 1535-46  
CODEN: PYESAZ; ISSN: 0032-3888  
PUBLISHER: Society of Plastics Engineers  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A slit viscometer to measure the viscosity of polymer melts under  
processing conditions is described. Along the slit a pressure  
drop is generated by applying a pressure at both the entrance and  
the exit. In this way the pressure in the center can be  
**controlled** independently of the shear rate. The pressure  
**gradient** in the slit is measured by means of three  
pressure transducers which are mounted in the region of fully  
developed flow. The results of pressure-dependent viscosity

measurements on polystyrene, ABS resin, and polypropylene are presented in a shear rate range of five decades. The flow curves obtained at different pressures and temps. can be shifted onto a master curve. The shear thinning behavior of the three materials is adequately described with the generalized Cross-Carreau equation, while the zero shear viscosity is modeled with a generalized Arrhenius-WLF (Williams-Ferry-Landel) relationship, incorporating a pressure dependency. Alternatively, it is possible to describe the zero shear viscosity in terms of the free volume fraction and the temperature

IT 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(Ronfalin SFA; pressure dependency of viscosity of molten polymers determined by slit viscometer)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

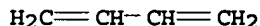
CMF C3 H3 N



CM 2

CRN 106-99-0

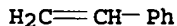
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-9 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 37

IT 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(Ronfalin SFA; pressure dependency of viscosity of molten polymers determined by slit viscometer)

L122 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:491658 HCAPLUS

DOCUMENT NUMBER: 121:91658

TITLE: Interpenetrating polymer network (IPN) as a permanent joint between the elements of a new type of artificial cornea

AUTHOR(S): Chirila, Traian; Vijayasekaran, Sarojini;  
Horne, Robert; Chen, Yi Chi; Dalton, Paul D.;  
Constable, Ian J.; Crawford, Geoffrey J.  
CORPORATE SOURCE: Lions eye Inst., Nedlands, 6009, Australia  
SOURCE: Journal of Biomedical Materials Research  
(1994), 28(6), 745-53  
CODEN: JBMRBG; ISSN: 0021-9304  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The combination at the interface between 2 chemical identical polymers was investigated by light and electron (scanning, transmission) microscopy. The polymers constitute elements of a new type of artificial cornea in which the peripheral skirt was made from spongy poly(2-hydroxyethyl methacrylate) (PHEMA) and the central optical zone from homogeneous, transparent PHEMA. Their 2-phase combination along the boundary fulfill formally the requirements for an IPN. The procedure for the manufacture of prosthesis was described in detail. Thin and ultrathin sections excised from the interface region were investigated using microscopic techniques. Light microscopy allowed the measurement of the diffusion path length of transparent PHEMA into sponge, which was approx. 0.5 mm. Transmission electron microscopy revealed a cellular-like morphol. as well as larger segregated zones, which indicated network interpenetration on a mol. level and also a relatively poor miscibility of the 2 polymers despite their identical chemical structure. The latter was interpreted as a result of the submicroscopic restraints imposed by polymer I (sponge) upon polymer II. This study provides evidence that the interface combination of the prosthetic elements should be regarded as a gradient homo-IPN. This system offers a union between elements much stronger than those previously reported in artificial corneas.

IT 156727-36-5

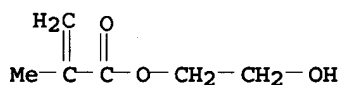
RL: BIOL (Biological study)  
(interpenetrating networks of, for artificial cornea)

RN 156727-36-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with 2-hydroxyethyl 2-methyl-2-propenoate and 1,3-pentadiene (9CI) (CA INDEX NAME)

CM 1

CRN 868-77-9  
CMF C6 H10 O3



CM 2

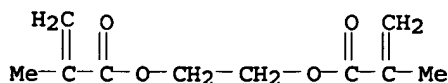
CRN 504-60-9  
CMF C5 H8



CM 3

CRN 97-90-5

CMF C10 H14 O4



CC 63-7 (Pharmaceuticals)

IT 25249-16-5, Poly(2-hydroxyethyl methacrylate) 156727-36-5

RL: BIOL (Biological study)

(interpenetrating networks of, for artificial cornea)

L122 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:120633 HCAPLUS

DOCUMENT NUMBER: 106:120633

TITLE: Cast films with crystalline  
tetracyanoquinodimethane radical ion salts: a  
new way to increase the electrical  
conductivity

AUTHOR(S): Hocker, Juergen; Jonas, Friedrich; Mueller,  
Hans Klaus

CORPORATE SOURCE: Zent. Forsch. Entwickl., Bayer A.-G.,  
Leverkusen, D-5090, Fed. Rep. Ger.

SOURCE: Angewandte Makromolekulare Chemie (1986),  
145-146, 191-210  
CODEN: ANMCBO; ISSN: 0003-3146

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Antistatic, transparent films were prepared from polycarbonates or  
cellulose acetate [9004-35-7] containing TCNQ radical ion  
salts to increase the elec. conductivity. The radical salts  
increased the elec. conductivity of the polymers into the  
antistatic region, and the resulting elec. properties were  
practically independent of atmospheric humidity. The formation of  
appropriate crystal structure, e.g., dendrites, fibers, or  
whiskers, of the TCNQ salts was crucial for increasing  
the elec. conductivity. The crystalline precipitation must form a 3-dimensional  
network throughout the polymer matrix; such network formation was  
attained only by crystallization from solution. With ideal crystal  
distribution, the addition of 0.5% salt gave elec. conductivity  $\leq 10^{-3}$   
S/cm. The films behaved as elec. semiconductors and had a pos.  
temperature gradient. The modified polycarbonate  
films could be used as transparent packaging films.

IT 9003-56-9

RL: USES (Uses)

(films, containing radical ion salts, elec. conductivity of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N

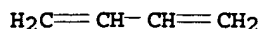




CM 2

CRN 106-99-0

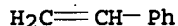
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



- CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38
- IT Polycarbonates, uses and miscellaneous  
RL: USES (Uses)  
(antistatic films, containing TCNQ radical ion salts,  
elec. conductivity of and radical ion salt crystallization in)
- IT Electric conductivity and conduction  
(of antistatic polymer films containing TCNQ radial  
salts)
- IT 9004-35-7, Cellulose acetate 24936-68-3, BisphenolA-carbonic  
acid copolymer, SRU, uses and miscellaneous 25037-45-0,  
BisphenolA-carbonic acid copolymer  
RL: USES (Uses)  
(films, antistatic, containing TCNQ radical salts, elec.  
conductivity and radical salt crystal structure in relation to)
- IT 100-42-5, uses and miscellaneous 9003-56-9  
RL: USES (Uses)  
(films, containing radical ion salts, elec. conductivity of)
- IT 51686-20-5  
RL: USES (Uses)  
(polycarbonates and cellulose acetate films containing,  
elec. conductivity in relation to)
- IT 12366-26-6  
RL: USES (Uses)  
(polycarbonates and styrene polymers containing, elec.  
conductivity of)

L122 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1983:108075 HCAPLUS

DOCUMENT NUMBER: 98:108075

TITLE: Determination of composition distribution of  
acrylonitrile-styrene copolymers by thin-layer  
chromatography

AUTHOR(S): Ogawa, Toshio; Ishitobi, Wataru

CORPORATE SOURCE: Hirakata Plast. Lab., Ube Ind., Ltd.,  
Hirakata, 573, JapanSOURCE: Journal of Polymer Science, Polymer Chemistry  
Edition (1983), 21(3), 781-8  
CODEN: JPLCAT; ISSN: 0449-296X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Determination of chemical composition distribution of acrylonitrile(I)-styrene copolymers (II) [9003-54-7] was performed by thin-layer chromatog. (TLC). A mixture of C<sub>6</sub>H<sub>6</sub> and MeCOEt gave the most suitable calibration curve of R<sub>f</sub> values vs. I concns., where a concentration-gradient technique was applied for development. Average I concns. obtained by TLC were coincident with those found by elemental anal. II extracted from ABS resin [9003-56-9] were sufficiently arranged in order of breadth of composition distribution by using the data from TLC. Agreement between the composition distribution curve and that from the theory of copolymn. was good.

IT 9003-56-9

RL: PRP (Properties)

(acrylonitrile-styrene copolymers extracted from, sequence distribution of, thin-layer chromatog. determination of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

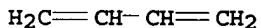
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-2 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 80

IT 9003-56-9

RL: PRP (Properties)

(acrylonitrile-styrene copolymers extracted from, sequence distribution of, thin-layer chromatog. determination of)

L122 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1982:123800 HCAPLUS

DOCUMENT NUMBER: 96:123800

TITLE: Charpy impact resistance of weathered thermoplastic sheets

AUTHOR(S): Nishimura, Okio; Kubota, Hiroshi; Suzuki, Satoru

CORPORATE SOURCE: Hokkaido Ind. Dev. Lab., Sapporo, Japan  
SOURCE: Hokkaido Kogyo Kaihatsu Shikensho Hokoku  
(1981), 24, 145-52  
CODEN: HKKHAG; ISSN: 0441-0734

DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

AB Flatwise and edgewise Charpy impact tests were carried out on sheets of polystyrene (I) [9003-53-6], PVC [9002-86-2], poly(Me methacrylate) [9011-14-7], ABS [9003-56-9], polyoxymethylene, and polyethylene (II) [9002-88-4] which were exposed at Sapporo for 3 yr. The yearly changes in Charpy impact strength (aKC) were evaluated and correlations with mech. properties were investigated. In the case of I, ABS, polyoxymethylene and II, aKC decreased sharply on outdoor exposure. The decrease was largest on the 1st exposure period and became gradual on subsequent exposure. After 1-yr exposure all plastics (except PVC) broke on edgewise striking, and I, ABS, polyoxymethylene, and II broke in the flatwise striking unnotched state. Lower values were obtained in the flatwise test than in the edgewise test. For I, ABS, polyoxymethylene and II correlations were obtained between aKC and tensile strength ( $\sigma_t$ ), elongation at rupture (dt), rupture energy (Wf), flexural strength, and maximum deflection. In the tensile test the gradient of the line which shows the correlation between  $\sigma_t$  and aKC changed widely depending on whether the breaking occurred before or after the yield point. The dt and Wf of PVC decreased on exposure, but changes in aKC were not observed as the breaking occurred in the ductile area.

IT 9003-56-9  
RL: USES (Uses)  
(outdoor weathering of, Charpy impact resistance in relation to)  
RN 9003-56-9 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

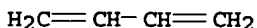
CM 1

CRN 107-13-1  
CMF C3 H3 N



CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8

H<sub>2</sub>C=CH-Ph

CC 37-5 (Plastics Manufacture and Processing)  
 IT 9002-86-2 9002-88-4 9003-53-6 9003-56-9 9011-14-7  
 RL: USES (Uses)  
 (outdoor weathering of, Charpy impact resistance in relation to)

L122 ANSWER 21 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1981:588018 HCAPLUS  
 DOCUMENT NUMBER: 95:188018  
 TITLE: Charpy impact resistance of weathered thermoplastics  
 AUTHOR(S): Nishimura, Okio; Kubota, Hiroshi; Suzuki, Satoru  
 CORPORATE SOURCE: Gov. Ind. Dev. Lab., Hokkaido, Japan  
 SOURCE: Proceedings of the Japan Congress on Materials Research (1981), 24th, 288-94  
 CODEN: JMRPA9; ISSN: 0368-3141  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The Charpy impact strength (aKC) of polystyrene (I) [9003-53-6], ABS [9003-56-9], polyoxymethylene (II), and polyethylene (III) [9002-88-4] sharply decreased on outdoor exposure over 3 y. The sharpest decline occurred during the 1st exposure level. After 1 y, all samples except PVC [9002-86-2] broke on edgewise striking, and all except PVC and poly(Me methacrylate) [9011-14-7] broke on flatwise striking. Lower values were obtained in the latter test. For I, ABS, II, and III, the Charpy impact values correlated well with tensile strength, elongation at rupture (dt), tensile rupture energy (Wt), and maximum deflection. In the case of the tensile test, the line gradient varied widely depending on whether the break occurred before or after the yield point. The dt and Wt of PVC decreased by exposure, but changes in aKC were not recognized because the breaking occurred in the ductile area. In many cases where a plastic breaks ductility-wise in a static tensile test in spite of weathering degradation, the aKC does not show such changes as to indicate correctly the practical impact performance.

IT 9003-56-9  
 RL: PRP (Properties)  
 (impact strength of, weathering effect on)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

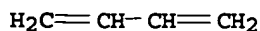
CRN 107-13-1  
 CMF C3 H3 N

H<sub>2</sub>C=CH-C≡N

CM 2

CRN 106-99-0

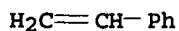
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-5 (Plastics Manufacture and Processing)

IT 9002-86-2 9002-88-4 9003-53-6 9003-56-9 9011-14-7

RL: PRP (Properties)

(impact strength of, weathering effect on)

L122 ANSWER 22 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:461237 HCAPLUS

DOCUMENT NUMBER: 91:61237

TITLE: Study of the intermediate layer of metallized plastics. (3. Hardness of the etched surface of ABS-2020 plastics)

AUTHOR(S): Paulavicius, R.; Salkauskas, M.; Zitkeviciute, I.; Bikulcius, G.

CORPORATE SOURCE: Inst. Khim. Khim. Tekhnol., Vilnius, USSR

SOURCE: Lietuvos TSR Mokslu Akademijos Darbai, Serija

B: Chemija, Technika, Fizinė Geografija

(1979), (3), 85-91

CODEN: LMDBAL; ISSN: 0024-2993

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The surface hardness gradient of etched plastic ABS-2020 [9003-56-9] was determined and its effect on the adherence with Cu coating was evaluated. Etching of ABS-2020 in a H<sub>2</sub>SO<sub>4</sub> solution of CrO<sub>3</sub> changed the surface hardness to a depth of 1.5 μ. Maximum values of surface hardness and roughness created conditions for better adherence between the Cu coating and the plastic.

IT 9003-56-9

RL: USES (Uses)

(hardness of etched, copper coating adherence in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

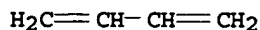
CRN 107-13-1

CMF C3 H3 N



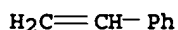
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



- CC 56-5 (Nonferrous Metals and Alloys)  
Section cross-reference(s): 37
- IT Coating materials  
(copper, adherence of, to ABS, etched surface hardness in relation to)
- IT Etching  
(of ABS, surface hardness and copper coating adherence in relation to)
- IT 7440-50-8, uses and miscellaneous  
RL: USES (Uses)  
(adherence of coatings of, ABS etched surface hardness in relation to)
- IT 7664-93-9, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(etching with chromic acid-containing, of ABS, surface hardness and adherence of copper coating in relation to)
- IT 1333-82-0  
RL: USES (Uses)  
(etching with sulfuric acid containing, of ABS, surface hardness and copper coating adherence in relation to)
- IT 9003-56-9  
RL: USES (Uses)  
(hardness of etched, copper coating adherence in relation to)

L122 ANSWER 23 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1975:99441 HCAPLUS  
DOCUMENT NUMBER: 82:99441  
TITLE: Motionless mixers in plastic processing  
AUTHOR(S): Schott, N. R.; Weinstein, B.; LaBombard, D.  
CORPORATE SOURCE: Dep. Plast. Technol., Lowell Technol. Inst.,  
Lowell, MA, USA  
SOURCE: Chemical Engineering Progress (1975), 71(1),  
54-8  
CODEN: CEPRA8; ISSN: 0360-7275  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Pressure drop and heat transfer data were determined for polyethylene (I) [9002-88-4], polypropylene [9003-07-0], polystyrene [9003-53-6], and ABS [9003-56-9] during flow through a pipe containing a stationary baffle (motionless mixer) or an open pipe. For I, the melt properties were used to calculate the pressure drop in the empty pipe by a friction factor

relation, and the calculated pressure was used to divide the total pressure drop into contributions due to the empty pipe and the mixer elements. The pressure drops were affected by heating of the I during flow. The mixing elements reduced the temperature gradients in the molten polymer.

IT 9003-56-9

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

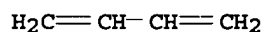
CMF C3 H3 N



CM 2

CRN 106-99-0

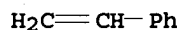
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 37-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 48

ST mixer motionless polymer melt; heat transfer polymer mixing; polyethylene melt motionless mixer

IT Heat transfer

(in polymer melts, in motionless mixers)

IT Polymers, uses and miscellaneous

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

IT Mixing apparatus

(motionless, for molten polymers, heating and pressure drop in)

IT 9002-88-4 9003-07-0 9003-53-6 9003-56-9

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

L122 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1974:553891 HCAPLUS

DOCUMENT NUMBER: 81:153891  
 TITLE: Viscous dissipation in die flows  
 AUTHOR(S): Cox, Howard W.; Macosko, Christopher W.  
 CORPORATE SOURCE: Dep. Chem. Eng. Mater. Sci., Univ. Minn.,  
 Minneapolis, MN, USA  
 SOURCE: AIChE Journal (1974), 20(4), 785-95  
 CODEN: AICEAC; ISSN: 0001-1541  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Large temperature rises, <70.deg., were observed for the flow of ABS polymer [9003-56-9] and branched polyethylene [9002-88-4] melts in 3 die geometries. Calcns. indicated that severe radical temperature gradients existed in these flow geometries under conditions similar to those in polymer processing and in viscometry detns. A numerical solution of the flow equations modeled the flow situation in all 3 geometries. A simple Nusselt number correlation gave good agreement between predicted and determined melt surface temperature rises. The pressure drop indicated that a nonisothermal flow occurred, and did not distinguish the type of heat transfer boundary condition present.

IT 9003-56-9  
 RL: USES (Uses)  
 (flow of molten, surface temperature rise in relation to)  
 RN 9003-56-9 HCAPLUS  
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
 (9CI) (CA INDEX NAME)

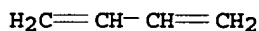
CM 1

CRN 107-13-1  
 CMF C3 H3 N



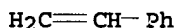
CM 2

CRN 106-99-0  
 CMF C4 H6



CM 3

CRN 100-42-5  
 CMF C8 H8



CC 37-2 (Plastics Fabrication and Uses)  
 IT Flow  
 (of polymer melts, surface temperature rise of, determination of)  
 IT 9002-88-4 9003-56-9  
 RL: USES (Uses)



(flow of molten, surface temperature rise in relation to)

L122 ANSWER 25 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1969:38556 HCAPLUS

DOCUMENT NUMBER: 70:38556

TITLE: Comparison of various platable plastics  
substrates for appliance backsplash parts  
AUTHOR(S): Eshenaur, R. E.; Isaacs, Jack L.; Robb, W. C.  
CORPORATE SOURCE: Gen. Elec. Co., Louisville, KY, USA  
SOURCE: Technical Papers of the Regional Technical  
Conference, Society of Plastics Engineers,  
Connecticut Section (1968) 1-15  
CODEN: TPCSA6

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two acrylonitrile-butadiene-styrene copolymers(I), 4  
polypropylenes (II), and 1 high-impact polystyrene (III) were  
plated by com. available plating processes and evaluated for  
appearance, thermal cycle test, static temperature  
test, peel strength test, plating thickness, plate weight,  
high heat and humidity test, steam exposure test,  
stiffness test, impact test, twist test, cantilever beam test,  
gradient temperature test, and special tests  
evaluating the unmolding temperature, flammability, resistance  
to an elec. spark, and AcOH bath. From an overall performance  
standpoint, plated II gave better performance than plated I or  
III. The II was especially superior where high temperature and (or)  
humidity were present. One II gave the best general performance  
and will be considered for further severe applications. Other  
substrates performed well enough to be considered for less critical  
applications. The results were tabulated.

IT 9003-56-9, uses and miscellaneous

RL: USES (Uses)

(appliance backsplashes from coated, evaluation of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

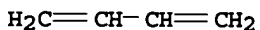
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

CC 37 (Plastics Fabrication and Uses)  
 IT Household furnishings  
 (appliances, coated vinyl compound polymers as  
 backsplashes for)  
 IT 9003-07-0, uses and miscellaneous 9003-53-6, uses and  
 miscellaneous 9003-56-9, uses and miscellaneous  
 RL: USES (Uses)  
 (appliance backsplashes from coated, evaluation of)

=>